

Ministry of Finance

# Policy Review of Article 11 (chapter IX): Financing national debt

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## Management Summary

In this policy review the full text of Article 11 – ‘Financing national debt’ – of budget chapter IX is reviewed for the policy period 2016-2019. The effectiveness and efficiency of the policy conducted in the period 2016-2019 has been investigated and the 15 questions from the Periodic Evaluation Regulations (*Regeling Periodiek Evaluatieonderzoek*) have been answered.

The previous policy review from 2015<sup>1</sup> concluded that the policy framework over the period 2012-2015 was effective and efficient and contained five recommendations for the policy framework 2016-2019:

- Define clear risk and cost criteria against which the total debt portfolio can be assessed (including maturity extensions), on the basis of which the results vis-à-vis those criteria can be clearly reported and that can be used as a basis to steer policy.
- Reduce the scale at which interest rate swaps are used in view of the adverse side effects.
- Analyse the extent to which extending the maturity of the portfolio is desirable considering the historically low interest rate and flat yield curve.
- Carry out additional research into whether and to what extent greater flexibility on the capital market is desirable and possible, without compromising on predictability.
- Carry out an interim evaluation of the new policy framework regarding debt financing, in particular with respect to the ability to respond to changing circumstances.

The general objective of Article 11 reads: ‘Debt financing at the lowest possible interest cost under acceptable risk to the budget’. Efficiency is thereby part of the policy article. The central research question of the policy review was: “To what extent has the policy pursued contributed to debt financing at the lowest possible cost at acceptable risk to the budget?”. Part of the research for this policy review was carried out by SEO Amsterdam Economics (*SEO Economisch Onderzoek*)<sup>2</sup>, which was supplemented by analyses of the DSTA (Dutch State Treasury Agency).

The DSTA finances the Dutch national debt by issuing debt securities on the capital market (Dutch State Loans - DSLs) and on the money market (treasury bills - DTCs). On the money market the DSTA also uses Commercial Paper and deposits. The DSTA can place surplus funds on a deposit account at the central bank (DNB), subject to conditions. For trading, distribution and promotion of Dutch debt securities, DSTA annually appoints a number of financial institutions as Primary Dealers (PDs). PDs receive a fee for their services, depending on their performance. Every year in December, the DSTA announces in its ‘Outlook’ the estimated funding need of the Dutch state for the following year, including its funding plan and issuance calendar.

There are several risks involved in financing the national debt, such as interest rate risk, currency risk, (re)financing risk, liquidity risk, credit risk, settlement risk and operational risk. These risks are managed and mitigated in various ways, for example by setting credit rating requirements for counterparties, applying limits to the amounts placed with counterparties, only lending out funds for very short periods, requiring collateral to be posted or using currency swaps. The funding policy aims to manage the (re)financing risk and the liquidity risk; the interest rate risk is managed by the interest rate risk framework. The funding policy and the interest rate risk framework are the two most important pillars of the risk policy for the national debt.

The funding policy consists of all the rules and preconditions applied by the DSTA to the use of financial instruments for funding the national debt. Three qualitative core values, based on international

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<sup>1</sup> *Parliamentary Papers II*, 2014/15, 31935, no. 20.

<sup>2</sup> Assessment of DSTA’s 2016-2019 Risk Framework and Funding Policy – Input for the DSTA’s 2016-2019 evaluation, 15 March 2019, SEO

guidelines of the IMF and the World Bank,<sup>3</sup> are central in this regard: transparency, consistency and liquidity. The underlying idea is that by being predictable and reliable, any uncertainty premiums the DSTA may have to pay when issuing loans will be kept to a minimum. And when debt securities are liquid (tradable), this reduces the risk for investors of not being able to sell the securities, or only under unfavourable conditions, should they wish to do so. This also contributes to lower funding costs.

The interest rate risk framework consists of two quantitative indicators: the average maturity – or more precisely the average time to refixing – of the portfolio and the 12-month refixing amount (*RA*). The average maturity is an indicator for long term risk and related interest costs. In principle a trade-off exists between interest costs and risk: the longer the period during which the interest on a loan remains fixed, the smaller the risk that the budget is affected by interest rate fluctuations, but the higher the interest costs are on that loan. The *RA* tells us something about the interest rate risk in the short term: it represents the percentage of the total debt for which the interest rate must be refixed in the upcoming 12 months (and for which there is a risk that a higher interest rate will apply).

Following the recommendations of the 2015 policy review and based on various scenario analyses at the end of 2015, the DSTA decided - given the circumstances at the time such as the historically low interest rates - to gradually extend the average maturity of the portfolio to 6.4 years at the end of 2019 (within a margin of +/- 0.25 years) and that the *RA* could amount to a maximum of 18% of the national debt. The choice for these indicators was based on the implicit hypothesis that by steering on the basis of these two variables, an efficient portfolio would be achieved, that being a portfolio with the lowest possible costs at a risk to the budget which is equal to or lower than the risk in the previous policy period.

In its research, SEO observed that during the period 2016-2019 the DSTA implemented its funding policy in accordance with aforementioned international guidelines for debt management, by focussing on transparency, consistency and liquidity. According to SEO, the Netherlands scores high on consistency and transparency compared to a number of other European countries<sup>4</sup>. SEO also concludes that the liquidity of the Dutch debt securities is well-maintained by the DSTA. The DSTA introduced a little more flexibility in its funding policy during this period, among others by applying a range instead of an exact target volume when announcing the borrowing amounts. According to SEO, this flexibility has not led to higher funding costs. Due to a declining funding need in this policy period (in particular as a result of budget surpluses) the DSTA lowered the target size of its 10-year bond issued annually, from €15 billion to €12 billion. SEO found, on the basis of quantitative research, that this led to a rise of 0.4 basis points (bp) in the so-called *bid-ask* spread; this slightly higher difference between the bid and ask can be a sign of reduced liquidity. However, the Primary Dealers observed hardly any effects, if at all, on the liquidity in the capital market and also consider the liquidity of DTCs to be sufficient.

With regard to the development of the interest rate risk framework, SEO observed that the method used by the DSTA to analyse various scenarios at the end of 2015 for the purpose of defining the indicators, was relatively simple and could be improved upon. At the same time, the calculations performed by SEO using a more refined method led to outcomes which were very close to the outcomes of the calculations by the DSTA. SEO also concludes that the risk appetite of the DSTA for the period 2016-2019 is in fact still equal to or lower than its risk appetite in 2002, when it was last made explicit. Since then, the starting point has always been that the risk for a new policy period should not be higher than the risk in the preceding period.

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<sup>3</sup> "Revised guidelines for public debt management", <https://www.imf.org/en/Publications/Manuals-Guides/Issues/2016/12/31/Revised-Guidelines-for-Public-Debt-Management-42600>

<sup>4</sup> Belgium, Germany, France, Italy, Portugal and Spain.

During the period 2016-2019, the DSTA has met its targets for the risk indicators RA and average maturity.

Overall, SEO concludes – based on the information available at the end of 2015 – that the risk indicators chosen by the DSTA for the period 2016-2019 did in fact lead to a portfolio with low funding costs and a risk no higher than the risk at the end of 2015. To put it another way, at that time it would have only been possible to achieve lower funding costs by accepting higher risks. Considering the risk appetite for the period 2016-2019, the objective of Article 11: funding the national debt at the lowest possible cost under acceptable risk to the budget, has thereby been met.

The DSTA uses interest rate swaps on the capital market to convert a fixed interest rate to a variable interest rate (*receiver swap*) or vice versa (*payer swap*). During the period 2016-2019 the DSTA reduced its dependency on interest rate swaps, in particular by no longer ‘swapping back’ the maturity of long term loans to the 7-year rate, by not entering into new swap agreements on the capital market and by terminating receiver swaps early. As a result, the swap portfolio has substantially reduced in size. The early termination of receiver swaps greatly contributed to meeting the objectives for average maturity and RA.

It follows from this policy review that the DSTA met the aim of Article 11 in the period 2016-2019 and that the policy was effective and efficient. The five recommendations from the policy review 2015 have been carried out.

This policy review contains the following recommendations for the new policy framework for the period starting in 2020:

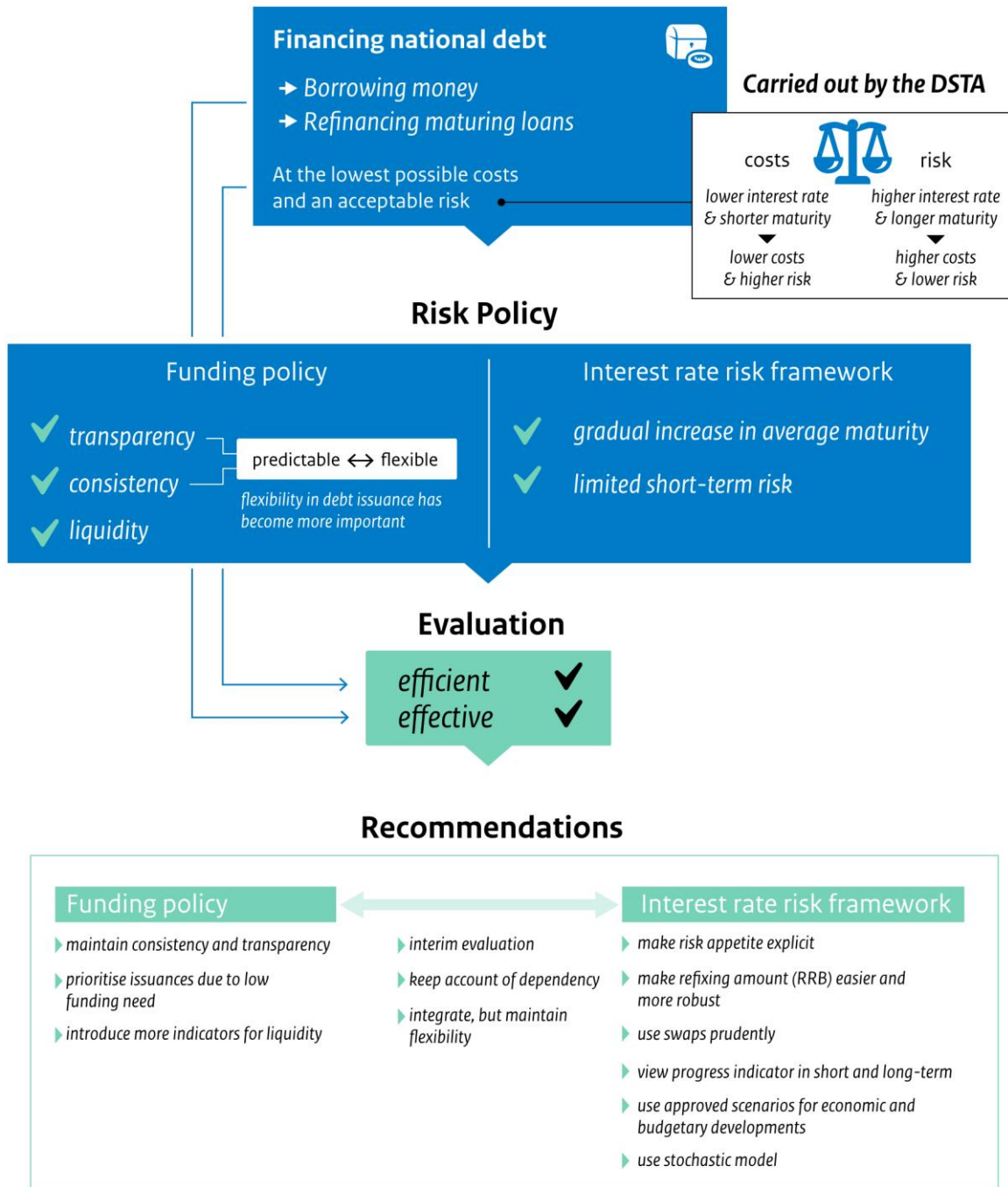
- Explicitly decide on and outline the (maximum) risk appetite of the government with regard to debt management and choose a risk indicator that measures that risk appetite.
  - In doing so, use a stochastic model to analyse ex ante various portfolios under certain interest rate and funding need scenarios, in order to assess the (weighted) impact of shocks.
  - Use scenarios that are consistent with the scenarios used by public bodies and market participants to predict economic and budgetary developments.
  - Conduct scenario analyses for the development of the risk indicators, also in the longer term.
  - Consider whether the way in which the RA as a risk indicator is calculated could be made clearer and more robust.
- Consider the dependency between the interest rate risk framework and the funding policy.
- Keep transparency and consistency at the current high levels, by continuing to inform both the market and the public in the present manner. At the same time, leave room for flexibility in the funding policy. Set priorities as to which government bonds should or should not be issued in the event of a declining funding need.
- Consider monitoring the liquidity of Dutch debt securities on a more continuous basis by referring to various different indicators.
- Remain conscious of becoming too dependent on interest rate swaps. At the same time, continue to regard swaps as a valid instrument for steering interest rate risks, if adjustments through debt issuance only is not considered desirable, for example for liquidity and/or consistency reasons. When applying swaps, try to implement the swap strategy in the most efficient way possible, for example by:
  - formulating an explicit benchmark against which the performance of the swap transactions can be measured;

- assessing whether it is preferable, from a cost/risk perspective, to enter into new swap agreements or terminate existing ones and – in the event that new swaps are entered into – whether a central counterparty (CCP) or a bilateral agreement with a counterparty is to be preferred.

The policy framework 2016-2019 stated that the policy would be evaluated in the interim if changing market circumstances would provide reason for doing so. Alternatively, it could be considered to determine immediately at the start of the new policy framework, that such an interim evaluation is to take place.

# Policy review defined

## Budget Chapter IX, Article 11





# 1 Introduction

This policy review refers to Article 11 of budget chapter IX,<sup>5</sup> and thereby on financing national debt<sup>6</sup>. Section 4.3(3) of the Government Accounts Act 2016 (*Compatibiliteitswet 2016*) stipulates that the Minister of Finance is responsible for management of the budget of the National Debt<sup>7</sup>, covering Article 11. The general objective of Article 11 – and the key topic in this policy review – is specified and explained in paragraph 1.1. Paragraph 1.2, briefly deals with recommendations from the previous policy review of Article 11, carried out in 2015. This is followed by the scope of current policy review in paragraph 1.3. Paragraph 1.4 briefly describes the sub-studies conducted by the external research agency, SEO (SEO Amsterdam Economics). Finally, paragraph 1.5 contains a reading guide for chapters 2-5, which particularly explains the relationship between the structure of this policy review and the Periodic Evaluation Regulation (*RPE*).

*Note: This is an unofficial translation of the Dutch policy review report. A number of paragraphs have not been translated into English, since they relate to specific Dutch internal budgetary context which is of less relevance for international readers. These paragraphs have been marked with \*\*.*

## 1.1 Objective of financing national debt

The general objective of Article 11 reads as follows: ‘Debt financing at the lowest possible interest cost under acceptable risk to the budget’. The objective can be split into two parts. The first part is debt financing itself. This is stipulated in Section 4.18 of the above-mentioned Government Accounts Act. This section states that ‘the Minister of Finance is responsible for (a) management of the national debt, and (b) concluding agreements for entering into loans by the State for the deficit financing and refinancing of expiring loans. Through various mandates, responsibility for the preparation and its final implementation lies with the DSTA.

The second part of the objective of Article 11 is to do so ‘at the lowest possible cost under acceptable risk to the budget’. ‘Risk to the budget’ refers to the extent in which the expected interest rate costs fluctuate from year to year or may be higher in any particular year than previously estimated. It is important to recognize that there is a conflict of interests. In general, the fact is that lower interest costs go hand in hand with higher risks and vice versa, as will be explained in paragraph 3.1. An optimum balance must continuously be sought between costs and risks. Whichever level of risk is acceptable, depends on the preferred risk. The risks underlying the ‘risk to the budget’ which the DSTA has to deal with include interest rate risk, currency risk, financing risk and refinancing risk, credit risk, operational risk and reputation risk. These risks are explained in more detail in paragraph 3.1.

The objective of Article 11 falls in line with internationally accepted principles for debt management, as expressed by the International Monetary Fund (IMF) and the World Bank in the ‘Revised Guidelines for Public Debt Management’<sup>8</sup>: *‘To ensure that the government’s financing needs and its payment obligations are met at the lowest possible cost over the medium to long term, consistent with a prudent degree of risk’*. Many other countries formulate their objective with regard to debt management in a similar way to the Netherlands.

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<sup>5</sup> Finance and National Debt

<sup>6</sup> Due to the processing time of a policy review, the cut-off date for figures is set on 30 June 2019, unless otherwise stated.

<sup>7</sup> The section of budget chapter IX that relates to the National Debt consists of Article 11 (Financing national debt) and Article 12 (Cash management). Article 12 was the topic of the policy review in 2018.

<sup>8</sup> <https://www.imf.org/en/Publications/Manuals-Guides/Issues/2016/12/31/Revised-Guidelines-for-Public-Debt-Management-42600>

On implementation of its mandate, the DSTA, also known as the 'debt manager', takes the budget and budgetary policy into consideration. After all, the cash balance in the budget - which must be financed by the debt manager - is largely the result of budgetary policy. The funding policy and interest rate risk policy also influence the total cash balance in the budget via interest payments. Conversely, it is also a fact that the cash balance influences the extent of interest payments through changes in the size of the national debt. Since 2017, interest payments have been subject to the so-called expenditure framework (putting a maximum ceiling to the total of all budget expenditures). This means that, given the expenditure framework, an exceedance on the budgeted interest payments will have to be compensated elsewhere within the national budget.

The debt manager operates within a broader macroeconomic context. Macroeconomic developments, after all, have an influence on how debt develops. If the Netherlands prospers economically, national debt will generally increase less quickly or it will even decrease. This can clearly be seen in the period to which this policy review relates. Since the beginning of 2016, the national debt has decreased by approximately €50 billion. In preceding years there was still a significant increase of debt. It is important that attention is paid in the budgetary policy to the long-term sustainability of debt. Budgetary policy and debt policy are jointly responsible for managing the debt under various circumstances, including economic setbacks and stress in the financial markets.

## 1.2 Policy Review 2015 and recommendations

A policy review of Article 11 takes place every four years. The last time was in 2015<sup>9</sup>. At that time, the extent of compliance with previously mentioned guidelines of the IMF and World Bank was assessed, to be able to substantiate whether pursued policy had been efficient and effective, as was and still is prescribed by the Periodic Evaluation Regulation<sup>10</sup> (*RPE*).

The policy review 2015 concluded that policy for the period 2012 -2015 had been effective. It largely complied with the guidelines of the IMF and World Bank. The DSTA conducted its own policies assiduously and effectively. Some adverse side-effects of putting the policy into effect were: a lack of flexibility in the funding policy; the consequences of the difference between government bond yields and the swap interest rates; the introduction of additional risks and costs other than the interest rate risk and interest costs. The latter were the result of the extensive swap portfolio. It was also concluded that the policy was basically effective. However, a reservation was placed here that entering into interest rate swaps as part of the development of interest rate risk policy, had become less effective during the policy period<sup>11</sup>. Finally, it was concluded that the funding policy for the period 2012-2015, in its design and development, had contributed to lower funding costs for the state.

To further increase the efficiency and effectiveness, the following recommendations were made in 2015:

- Define clear risk and cost criteria against which the total debt portfolio can be assessed (including maturity extensions), on the basis of which the results vis-à-vis those criteria can be clearly reported and which can be used as a basis to steer policy.
- Reduce the scale at which interest rate swaps are used in view of the adverse side effects. It is therefore logical to relinquish the 7-year benchmark maintained at that time, because this becomes too far removed from the realisable portfolios in practice.

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<sup>9</sup> *Parliamentary Papers II*, 2014/15, 31935, no. 20.

<sup>10</sup> Regulation of the Minister of Finance of 15 March 2018, providing rules for periodic evaluation (*RPE*), Government Gazette 2018, 16632

<sup>11</sup> Due to the substantial swap portfolio, there were major fluctuations in the value of swap portfolio on a daily basis, which made it difficult for daily cash management.

- Analyse the extent to which extending the maturity of the portfolio is desirable considering the historically low interest rate and flat yield curve.
- Carry out additional research into whether and to what extent greater flexibility on the capital market is desirable and possible, without compromising on predictability, because it is difficult to continue a complete disconnection between the interest rate risk policy and the funding policy.
- Carry out an interim evaluation of the new policy framework regarding debt financing, in particular with respect to the ability to respond to changing circumstances.

This policy review entails checking to what extent these recommendations have been followed up. This is mainly described in chapter 4.

### 1.3 Policy review 2019 and scope

In line with the *RPE*, the 2019 policy review aims to answer the question of whether policy has been effective and efficient in respect of Article 11 ‘Financing national debt’<sup>12</sup>. Based on the general objective of Article 11 (see paragraph 1.1), the key research question was: “To what extent has the policy pursued contributed to debt financing at the lowest possible cost at acceptable risk to the budget?”. Here it should be noted that efficiency forms part of the objective of Article 11, namely financing at the lowest possible cost. This implies that efficiency has been achieved if it is found that implementation of the policy in respect of debt financing based on Article 11 has been effective.

The 2019 policy review builds on the preceding policy review of 2015 and relates to the current policy framework for the period 2016-2019. This policy framework is based on two pillars: (i) the funding policy (paragraph 3.2) and (ii) the interest rate risk framework (paragraph 3.3), which, together, form the risk policy (paragraph 3.1). By reviewing both parts, an assessment can be given on the effectiveness and efficiency.

Finally, it should be noted that this policy review has been drawn up in the first half of 2019, a year which forms part of the review period 2016-2019. This is the result of the wish to include the findings of this policy review as much as possible in the draft of the new risk policy that must enter into force on 1 January 2020. Therefore, it was not possible to write this policy review only after 2019 has ended. The cut-off date for all data in this policy review was 30 June 2019, unless otherwise stated.

### 1.4 SEO Studies

The DSTA has had two sub-studies carried out on behalf of this policy review into the effectiveness and efficiency of the funding policy and the interest rate risk framework in the period 2016-2019. These studies were carried out by SEO Amsterdam Economics (SEO), under the leadership of Johannes Hers, in collaboration with Roel Beetsma (University of Amsterdam). SEO has researched the following sub-questions:

- (i) How and to what extent has the interest rate risk policy contributed to funding the national debt at the lowest possible cost under acceptable risk to the budget?
- (ii) How and to what extent has the funding policy and changes made to it, contributed to funding the national debt at the lowest possible cost under acceptable risk to the budget?

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<sup>12</sup> As a policy review, in essence, evaluates the effectiveness and efficiency of the policy (funding policy and risk framework), this policy review contains no assessment of the effectiveness of the DSTA's operational management. The amounts involved in the operational management, admittedly, are not inconsiderable, but are very low in proportion to the total expenditure and income related to debt financing (which amounts to tens of billions of euros). To be able to form a good assessment of the effectiveness of the operational management of the DSTA, an international comparative research could be a solution.

Is there room for more flexibility within the funding policy to increase efficiency, without the risk increasing?

The results of these studies are included in the report 'Assessment of DSTA's 2016-2019 Risk Framework and Funding Policy'<sup>13</sup>, which forms an important basis for this policy review and is simultaneously and comprehensively presented with this policy review to the Dutch House of Representatives. The SEO findings will be processed in the review policy, referring to the report and supplemented where necessary.

## 1.5 Reader's guide

Chapter 2 describes debt financing and cash management in the period 2016-2019: Which financing instruments did the DSTA have at its disposal and what were the relevant market circumstances? It also describes the expected funding need in that period compared to the achievements and development of the national debt. Chapter 3 deals with the risks that the DSTA is faced with in carrying out its mandate and how these risks are managed. The two pillars of the risk policy are explained: (i) the funding policy and (ii) the interest rate risk framework. Chapter 4 provides a qualitative and quantitative assessment of the pursued policies. The SEO studies form an important basis for this chapter. Chapter 4 also assesses to what extent the guidelines of the IMF and World Bank have been followed. Finally, the *RPE* questions are answered in chapter 5. Mention will be made each time on which previous information in the policy review the answers are based. Chapter 5 will also contain recommendations for the coming period and a section on improvements. Annex 1 contains a glossary of technical terms.

*\*\*Not translated*

*Text box 1: Insights to Quality programme ("Operatie inzicht in Kwaliteit") \*\**

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<sup>13</sup> Assessment of DSTA's 2016-2019 Risk Framework and Funding Policy – Input for the DSTA's 2016-2019 evaluation, 15 March 2019, SEO

## 2 Debt financing and cash management 2016-2019

### 2.1 Instruments

The DSTA uses various instruments to finance the national debt within the framework of the funding policy (paragraph 3.2) and the interest rate risk framework (paragraph 3.3). How these various instruments are used is detailed annually in the funding plan, which is published in the so-called 'Outlook' in December (see paragraph 2.3). Every year, this 'Outlook' is presented by the Minister of Finance to the president of the Dutch House of Representatives. The funding plan is based on the expected funding need for the year in question. The funding need primarily arises through redemptions of existing loans and the expected cash balance in the budget. The funding plan details how the total funding need is provided for. It sets out how the need is distributed across the capital market and money market, where the aim is to achieve sufficient liquidity of the instruments in both markets. Liquidity is one of the DSTA's core values of the funding policy, along with consistency and transparency. This is explained in more detail in paragraph 3.2. Regular publications ensure that investors are informed about changes in the funding need and their effect on the DSTA's activities in the financial markets.

#### *Capital market instruments*

The DSTA issues government bonds in the capital market with maturities of longer than one year. These debt securities are known in the financial markets as Dutch State Loans (DSLs). The total call on the capital market is announced annually in the funding plan and expressed in a range (e.g. between €19 - €23 billion for 2019). The funding plan also shows which loans are placed, including the amounts that are involved, possibly within certain ranges. Each quarter, it is then determined what specific debt issuances will be placed. Such issuances are communicated in a timely manner to investors by means of quarterly calendars. These contain the proposed auction dates and the indicative issuance volumes. The issuance volumes are likewise expressed in ranges. DSLs are placed in euros. In the past, the DSTA also issued government bonds in US dollars, which immediately hedged the currency risk. At that time, the DSTA could make use of this possibility because the funding need was relatively high and this could allow for some leeway in addition to the more regular instruments, however, always under the condition of a cost saving compared to the regular instrument in euros.

New DSLs with a maturity of five years or more, as a general rule, are auctioned by means of a Dutch Direct Auction (DDA). Investors are able to buy DSLs through banks especially designated for that purpose (the Primary Dealers, see paragraph 2.2). The reopening of existing loans, in principle, takes place through tap auctions on the second and (if needed) fourth Tuesday of the month. The same applies to new bonds with a maturity of less than five years.

## Text box 2: Green bond

### *Green bond*

In his letter to the Dutch House of Representatives of 31 October 2018, the Minister of Finance announced the intention to issue green bonds\* in 2019. This is the first green bond for the Netherlands and the Netherlands is the first country with a triple A rating that has issued a green bond. The Netherlands is using this green bond to anticipate the high demand from investors for this type of instrument. In addition, it supports the formation and further development of a robust green financial market, in which capital is mobilised for climate purposes. The Dutch Green Bond is linked to the government's green budget expenditure: investors will be informed via a report about the manner in which the funds raised with the bond will be allocated to green expenditure. Also, the impact of expenditure associated with the green bond, will be reported. The starting points for the bond are contained in the 'Green Bond Framework' that was published on 9 April 2019 and sent to the Dutch House of Representatives, together with the so-called 'second party opinion' by Sustainalytics\*\*. The Netherlands has also had the green bond certified by the Climate Bonds Initiative, to make known that the proceeds of the green bond are allocated to the so-called 'dark green' expenditures and, therefore, the Green Bond Framework meets the highest standards. In all other respects, this green bond is comparable to a 'regular' DSL with a maturity of 20 years.

Issuance took place through a DDA on 21 May 2019 and has raised a rounded off €5.98 billion. The Dutch House of Representatives has been informed on the outcome of the DDA\*\*\*. A more detailed accountability will be included in the Ministry of Finance's Annual Report 2019.

\* *Parliamentary Papers II, 2018/19, 35000 IX, no. 8.*

\*\* *Parliamentary Papers II, 2018/19, 35000 IX, no. 23.*

\*\*\* *Parliamentary Papers II, 2018/19, 35000 IX, no. 20.*

### *Money market instruments and cash management*

The other part of the Dutch government's funding is financed by the DSTA on the money market. Various instruments can be used for this with maturities ranging from one day to twelve months (whereas, in practice, maturities are usually no longer than six months).

Treasury bills, better known as Dutch Treasury Certificates (DTC), are short-term debt securities, of which the principal sum has to be repaid within three to six months and represents an important part of the DSTA's total money market financing. As is the case for DSLs, the issuance of DTCs takes place in accordance with an issuance calendar, in which investors are informed each quarter of the scheduled auction dates and issuance volumes. Issuance volumes are also shown as a range for DTCs. DTC auctions generally take place on the first and third Monday of the month.

In addition to the regular and pre-announced issuance of DSLs and DTCs, within the framework of cash management, the DSTA has a number of money market instruments at its disposal which it can use in a more flexible way, depending on the funding need and market circumstances. The DSTA is also able to issue Commercial Paper (CP). CP is debt paper that is sold in euros and foreign currencies (where the currency risk is fully hedged) and, in practice, has a variable maturity ranging from one day to one month. In contrast to DSLs and DTCs, CP is not bound to predetermined issuance dates or issuance volumes. By issuing both Euro Commercial Paper (ECP) and United States Commercial Paper (USCP), the DSTA has access to a wide range of investors.

To be able to absorb any residual balances effectively, the DSTA also makes use of deposits and repurchase agreements (repos), mostly with maturities of less than one week. By using deposits, temporary deficits and surpluses can easily be raised or placed. Repos entail the sale of debt securities at the start of the transaction and the purchase of the same debt security on the maturity date. In

common practice, this is roughly equal to financing by means of deposits. Until recently, financing using repos only happened at the initiative of banks, where the DSTA acts as lender of last resort by lending scarce debt securities for a short-term. Since 2019, repos can also be actively used at the DSTA's own initiative, for example, to encourage the marketability of certain debt securities. By using reverse repurchase agreements (reverse repos) the DSTA is able to place excess cash with counterparties against collateral. To achieve this, debt securities are purchased at the start of the transaction, after which the same debt security is resold on the maturity date. In this way, the original purchase amount is placed at the counterparty, which partly hedges the credit risk with the received collateral. In the event of positive cash balances, the DSTA may also opt to buy back DSLs with a residual maturity of up to 24 months. In this way, peaks in daily funding needs can be absorbed, for example, when DSLs must be repaid within a certain period.

#### *Money market as a buffer*

As described at the beginning of this paragraph, on the basis of the funding need for the coming year, an announcement is made in the annual Outlook in December what the distribution will be between capital market issuances and money market issuances in that year. By assuming ranges for this, the DSTA retains some flexibility in the issuance. Fluctuations in the funding need in a year are mainly absorbed in the money market, because these instruments can be used more flexibly than capital market instruments. The money market thus serves as a buffer for changes in the funding need.

#### *DNB deposit account*

The DSTA may, under certain conditions, place surplus funds at the Dutch central bank (DNB). Due to the extremely relaxed liquidity ratios in the Eurozone which are a result of the expansionary monetary policy pursued by the ECB, counterparties more often have a positive cash position than in the past, which they can retain at relatively attractive rates at their central bank. This makes it increasingly difficult, more expensive and riskier to place surplus funds temporarily in the market. The most important condition associated with use of the DNB facility, is that the DSTA must inform DNB at least five working days in advance of the balances that it wishes to keep at DNB. On the largest part of the balance, DNB currently reimburses the DSTA at a rate equal to the deposit interest rate<sup>14</sup>.

There are two main reasons why the DSTA uses the facility in the context of cash management. First of all, the safe placing of temporary surplus funds in periods when the cash position is positive; this situation occurs most often at the end of the month when more tax revenues are received than expenses paid, and after any major auctions (such as after a DDA at which time amounts of €5 to €6 billion flow in at once). By relying on the DNB facility, the DSTA reduces credit risk. The second reason is that by using the facility, the DSTA can accumulate a positive balance in the run-up to substantial redemptions and coupon payments. An example: because 10-year loans have 15 July as the standard coupon date, every year there is a substantial outflow of cash on 15 July. To prevent the DSTA from withdrawing major amounts at once from the market on that day (with possible upward price pressure as a result), funding is raised in the days prior to 15 July and temporarily parked at DNB. On 15 July, the balance at DNB is used for redemptions and coupon payments. In this way, refinancing and liquidity risk are mitigated.

#### *Derivatives*

The DSTA uses various derivatives to hedge risks inherent in capital market and money market issues. For instance, currency risk on debt in foreign currencies is hedged using currency swaps. In the event of a currency swap, the amount in foreign currency borrowed at the start of the transaction is

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<sup>14</sup> Since 16 March 2016, the deposit interest rate was equal to -0.40%; on 18 September 2019, the ECB reduced this to -0.50%



exchanged for euros. On maturity, these cash flows are reversed, where euros are exchanged for foreign currencies, so that the original money lender can be repaid. The DSTA also uses interest rate swaps. Interest rate swaps involve an exchange of fixed and variable cash flows between parties, and enable the DSTA to adjust the maturity of the portfolio, and thus the interest rate risk on the budget. Here too, the interest rate risk can be expected to fall as the maturity of the debt and swap portfolio increases, because the average interest due is fixed for long periods. For so-called payer swaps, a fixed interest rate must be paid and a variable interest rate is received. For a receiver swap, a fixed interest rate is received and a variable interest is paid. In principal, derivatives are traded with PDs.

## 2.2 Primary Dealer system

The DSTA makes use of Primary Dealers (PDs), Single Market Specialists (SMSs) and Commercial Paper Dealers (CPDs). These are national and international financial institutions who are appointed and who are responsible for the distribution and promotion of Dutch DSLs, DTCs and CPs. Where SMSs are entitled only to take part in DTC auctions, PDs are entitled to take part in both DSL auctions as well as DTC auctions. Commercial Paper (CP) is sold exclusively to CPDs. In addition, PDs and SMSs have access to the repo facility. The repo facility gives them the option to borrow short-term debt securities from the DSTA. This goes hand in hand with reporting and quotation obligations. Under the reporting obligation, PDs and SMSs provide data, inter alia, on their activities in the secondary market. Under the quotation obligation, it is mandatory for PDs and SMSs to actively offer competitive buying and selling prices in the secondary market, which contribute to the tradability of Dutch debt securities in the secondary market.

The PDs are selected and contracted annually by the DSTA. The DSTA bases the selection, inter alia, on the so-called 'business plans' of each PD, containing information, among other things, on the distribution network and capital volume of a PD. In the business plan, the PD describes which added value it has for the DSTA, what role it sees for itself in the market for DTCs and DSLs, what their client base contains (geographic orientation, distribution over investor groups), and what kind of performance they expect to provide at the auctions (e.g. in terms of market share). The PD's performance in the secondary market and during the auctions in the current year are also considered in the selection for the new year. If necessary, the DSTA invites a PD to The Hague to explain the business plan and the commitment to the Dutch state.

All PDs receive a fee from the DSTA, depending on their performance at auctions (see also paragraph 4.4.2). Part of the fee is in cash; the amount depends on the number of DDAs. An amount of approximately €4 to 6 million is available per DDA. Another part consists of the right, for a period of three working days after the tap auction, to buy up to 15% additional DSLs at the average auction price (the so-called 'non-comp facility'). This option has a value, depending on how the price develops after the auction. In addition, a PD has certain rights which exclusively apply for PDs, such as access to the DSTA's repo facility. At each DDA, the DSTA appoints three PDs as advisors. These PDs advise the DSTA about relevant market developments in the run-up to a DDA, the coupon, and the so-called 'roadshows' (meetings with potential investors). The advisors receive a fee from the DSTA for their advice.

## 2.3 Planning versus outcome

This section compares the annual funding plans to the final outcomes. Table 1 shows the funding plan for each year for the period 2016-2019, as included in the annual Outlook (published in December of the previous year), as well as its update in early January, and the actual figures reported at year end.



Table 1: Funding need, funding plan and outcomes (in € billion).

Funding need	2016			2017			2018			2019		
	Outlook Dec	Update Jan	Outcome	Outlook Dec	Update Jan	Outcome	Outlook Dec	Update Jan	Outcome	Outlook Dec	Update Jan	Outcome
Capital market redemptions T	28.2	28.1	28.2	42.5	42.5	42.5	38.5	38.4	38.4	29.6	29.6	
Money market year end T-1	22.4	15.2	15.2	18.9	18.2	18.2	18.6	15.7	15.7	20.9	20.2	
Cash balance T*	7.6	7.6	-5.8	-2	-2	-17.7	-3.6	-3.6	-14.6	-7.2	-7.2	
Other income			-2.4									
Change in collateral			3.5			2.8			4.3			
DSL buy backs			8.1			3.8			1.2			
<b>Total funding need</b>	<b>58.2</b>	<b>50.9</b>	<b>46.8</b>	<b>59.4</b>	<b>58.7</b>	<b>49.6</b>	<b>53.5</b>	<b>50.5</b>	<b>45.1</b>	<b>43.3</b>	<b>42.6</b>	
Implementation of funding need												
<i>10-year bond</i>			15.1			15.6			12.4			
<i>7-year bond</i>						6.6			8.8			
<i>5-year bond</i>			8.0			7.5						
<i>Reopening existing loans</i>			3.5			4.2			2.5			
Capital market issuance	25-30	25-30	26.6	30-35	30-35	32.5	23-29	23-29	23.6	19-23	19-23	
Income from issuances above par			2.0			1.4			1.3			
Money market volume at year end	28.2-33.2	20.9-25.9	18.2	24.4-29.4	24.4-29.4	15.7	24.5-30.5	21.5-27.5	20.2	19-23	19-23	
<b>Total funding</b>			<b>46.8</b>			<b>49.6</b>			<b>45.1</b>			

\* A positive or negative value means that there is a negative or positive cash balance, which increases or decreases the funding need.

The funding plan consists of determining the size of the funding need and its implementation. The above table shows the relevant figures at three points in time:

- **Outlook:** During the annual Outlook event in December, the funding plan for the following year is announced. This contains the estimated funding need and how the DSTA plans to provide for it. This comprises the distribution between the money market and capital market within a certain range and a further specification of issuances (of DSLs) in the capital market. The cash balance in the budget that is used, is the most recent estimate shared with the Dutch House of Representatives; this is often the estimate in the Budget Memorandum.
- **Update:** The estimate of the funding need that is published in the funding plan in December, is updated in the first week of January based on the final money market volume at the end of the previous year. This may be higher or lower than in the Outlook due to the budgetary realisations in the last few weeks of the year.
- **Outcome:** The outcome column firstly shows the final volume of redemptions in the capital market in the particular year, the money market volume at the end of the previous year and the realised cash balance of the respective year. In addition, this column contains other revenues (e.g. the sale of shares in state owned enterprises), the change in collateral (in relation to swaps) and the total amount of DSL buybacks in that year. In addition, the outcome column indicates the specific instruments with which the capital market issuance was put into effect in that year. Finally, the money market volume at the end of the year is shown in the outcome column.

In Table 1, for each year in the period 2016-2019, it shows a similar development of the initial estimate of the funding need to the update at the beginning of January: as the cash balance is higher than

assumed in the funding plan, the funding need in that year is lower. This is the result of the strong performance of the Dutch economy as a result of which tax revenues rise and expenditures increase at a slower rate. Higher cash balances in any budget year and lower funding needs are translated into lower outstanding debt on the money market at the end of the year, and thus a lower funding and refunding need for the next year.

The final outcome for the funding need also shows a decrease compared to the updated financial need at the beginning of January. This is also the result of a higher than expected cash balance at the end of the year. The background to this lies in the more favourable economic circumstances than expected, resulting in higher tax revenues and lower government spending than estimated. With regard to the funding plan, it can be seen that the volume of capital market issuances for all the years ends up within the range that was communicated in the funding plan, whereas the money market volume ends up considerably lower than the original range. This illustrates the previously described role of the money market as a buffer: major changes in the funding need are absorbed by the money market, enabling the DSTA to meet issuances assigned to the capital market.

## 2.4 National debt and debt development in revenues and expenditures

The revenue and expenditure of Article 11 consist of three parts: loans (also known as change in debt), interest and other expenditures. The table below provides an overview of the revenue and expenditure of the loans and interest of 2016-2018. As a reference, the top row shows the size of the national debt at the end of the year.

Table 2: Revenues and Expenditures of Article 11 (in € million).

	2016	2017	2018
<b>Size of national debt (in € billion)</b>	<b>363</b>	<b>346</b>	<b>330</b>
<b>Expenditures</b>			
<b>Interest</b>	<b>7,829</b>	<b>6,977</b>	<b>6,289</b>
Long-term debt interest expenditure	7,533	6,847	6,236
Short-term debt interest expenditure	40	29	0
Expenditure on early redemptions (buy backs)	254	100	53
Interest expenditure on short-term derivatives	1	0	0
<b>Loans</b>	<b>36,000</b>	<b>47,286</b>	<b>39,533</b>
Long-term debt redemptions	36,000	43,303	39,533
Change in short-term debt	0	3,983	0
<b>Revenues</b>			
<b>Interest</b>	<b>6,678</b>	<b>2,995</b>	<b>4,762</b>
Short-term debt interest income	220	237	224
Interest on long-term derivatives	1,087	1,210	1,202
Interest on short-term derivatives	0	0	1
Revenue on early termination of derivatives	5,371	1,547	3,335
<b>Loans</b>	<b>33,973</b>	<b>32,534</b>	<b>27,777</b>
Long-term debt issuance	28,957 <sup>15</sup>	32,534	23,637
Change in short-term debt	5,016	0	4,140

### *Change in debt*

It can be seen that the largest portion of revenues and expenditures consist of the issuance of debt securities and their repayment. The issuance of debt securities leads to an inflow of funds i.e. revenue on Article 11, whereas redemptions lead to an expenditure (outflow of funds) on Article 11. Table 2

<sup>15</sup> Including take-over of outstanding debt of Propertize valued at €2.35 billion.

shows that in the years 2016-2018 a decrease took place in the issuance of loans, of almost €34 billion in 2016 to almost €28 billion in 2018. This was mainly caused by a positive cash balance as previously explained in paragraph 2.3. The total issuance of debt in a year is determined by two variables, the cash balance (the difference between revenue and expenditure) for the current year and the refinancing of existing debt. Together with the size of the money market at the end of the previous year (around €20 billion, see also Table 1), this makes up the funding need for a year.

### *Interest*

Interest expenditures are subdivided into ‘relevant general government balance’ and ‘non-relevant general government balance’. The interest expenditures relevant for the general government balance, are the interest expenditures and interest income on the long-term and short-term debt<sup>16</sup>. These interest expenditures, as was the case for the national debt, decreased in the period 2016-2018. The decrease in interest expenditures is partly explained by the reduced debt. However, interest expenditures on the debt have already shown a declining trend for many years, which does not apply to the debt. In the years before 2008, annual interest expenditures were still between €9 and 10 billion, which dropped to €6 billion in 2018. In the period 2008-2015, the national debt increased substantially in size (from less than €300 billion at the end of 2008 to €370 billion at the end of 2015). The fact that interest expenditures did not increase simultaneously, is due to the fact that very low interest rates have applied to the DSL issuances for many years. During the past period, relatively expensive debt was repaid, and refinanced with relatively cheap new debt. A large part of the interest expenditures on the long-term debt is determined by previously issued debt. For instance, of the €6,236 million in interest expenditures in 2018, only €65 million is attributable to loans issued in 2018. For 2016 and 2017, it concerns €50 million and €74 million respectively.

Interest expenditures that are not relevant to the general government balance, are the flows of interest on interest derivatives (see paragraph 2.1) that are used for financing national debt. The reason is that these flows of interest are dealt with as financial transactions. In the years 2016-2018, net interest revenue on derivatives amounted to between €1.1 billion and €1.2 billion. In anticipation of the risk policy for the period 2016-2019 (see chapter 3), early termination had already begun on long-term receiver swaps at the end of 2015. Hence, the State received the market value that those swaps had at that time, consisting of the present value of all future interest flows. In 2016, this led to a revenue of €5.4 billion, in 2017 the revenue amounted to €1.5 billion, and in 2018 it involved €3.3 billion. Moreover, these one-off revenues reduce the interest income by virtue of swaps in future years (effectively the interest income is brought forward when terminating a swap early).

Expenditures also took place each year because of the buy backs (or early redemptions) of DSLs; these buy backs are part of the ‘long-term debt redemptions’ line in the table. These early redemptions involved costs. As the interest rate has decreased over the past few years, the price at which a bond was bought back was higher than the nominal value. This is due to the fact that the coupon of the bond exceeds the prevailing interest rate in the market. This makes the market value of such a bond higher than the nominal value. Differences are accounted for in ‘Expenditure on early redemption’. Contrasting with this expenditure are lower interest expenditures in the years up to and including the original redemption, because no interest is paid anymore on the bonds bought back. In 2016, a total of €11.1 billion was bought back, of which about €8 billion was for loans maturing in 2017 and 2018. The corresponding expenditure amounted to €254 million. In 2017, a total of €4.4 billion was bought

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<sup>16</sup> Interest expenditures associated with derivatives are ‘non-relevant’ for the general government balance.

back, with an expenditure amounting to €100 million. In 2018, a total of €1.8 billion was bought back, which led to €53 million in expenditure.

#### *Other costs (not shown in table 2)*

In addition to the expenditures and revenues discussed above, expenditures are incurred by the DSTA in the context of day-to-day operations. Next to overhead and ICT costs, the largest part of these so-called 'other costs' consist of fees for Primary Dealers. As described in paragraph 2.2, the DSTA makes use of Primary Dealers (PDs) for the distribution and promotion of Dutch debt securities, for which the PDs receive a fee, which is common practice internationally. The financial fee received by PDs for their services depends on the amount of DSLs they buy at the launch of a new bond (in the DDA). In addition, in the run-up to the issuance of a new loan in the capital market, the DSTA seeks advice from three PDs, who receive an advisory fee in return.

**\*\* Not translated:**

*Tables 3 and 4 and elaboration on other costs for DSTA \*\**

## 2.5 Market circumstances

This paragraph describes the key market circumstances with regard to financing the Dutch national debt, during the relevant policy period for this policy review. The cut-off date for all data in this policy review was 30 June 2019, unless otherwise stated.

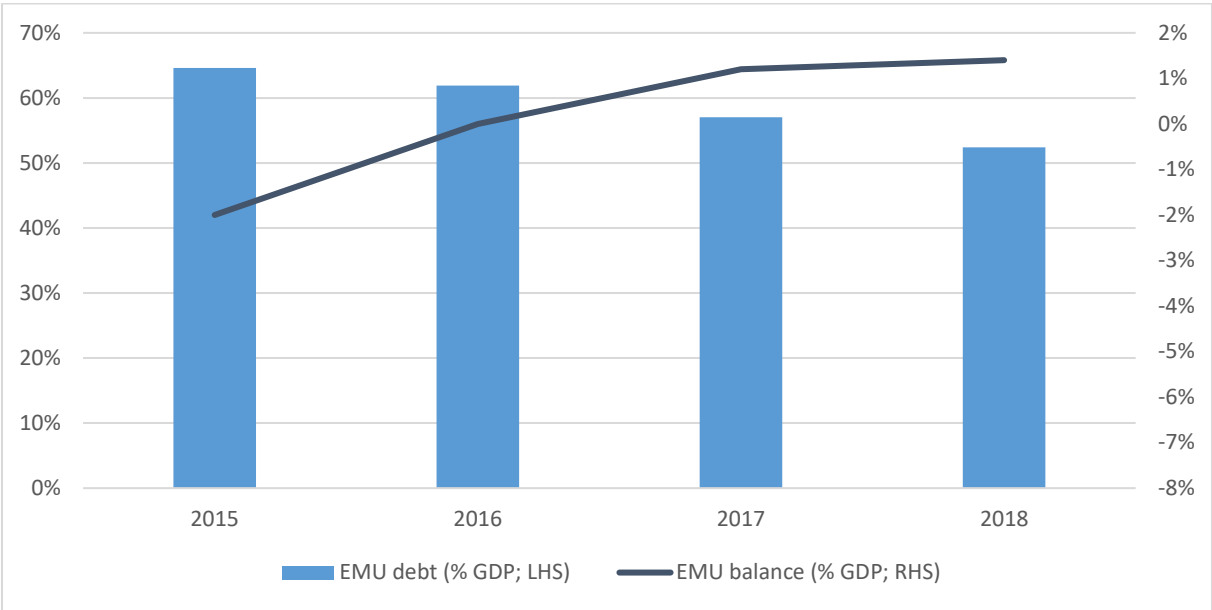
The economic recovery that began in 2014, continued in the years 2015 and 2016, with GDP growth rates of 2.0% and 2.2% respectively. The following year, 2017, provisionally achieved the strongest growth of the Dutch economy (2.9%) in the last decade. In 2018, growth reduced slightly to 2.5%, but was still consistently strong. The expectation at the end of June was that growth would drop in 2019 to a standard growth rate in the vicinity of a potential growth of 1.5%. This growing economy trend, which saw more growth than the potential growth in the period 2015-2018<sup>17</sup>, runs parallel to a trend of a declining unemployment rate; from the first quarter of 2014 with an unemployment rate of 7.81%, this has decreased steadily to 3.59% in the last quarter of 2018.

The above-mentioned indicators, as presented by the Netherlands Bureau for Economic Policy Analysis (CPB), show a strong Dutch economy. This picture is confirmed by CPB figures in relation to the development of the general government debt (EMU-debt). In 2017, the Netherlands achieved for the first time since 2010 a debt level below the maximum of 60% of GDP set by the EU, see figure 1 hereafter. This downward trend in the general government debt subsequently continued to 52.4% in 2018. The general government balance (EMU-balance) rose from 0% in 2016 to 1.4% (a surplus) in 2018.

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<sup>17</sup> <https://www.cpb.nl/publicatie/middellangetermijnverkenning-2018-2021>

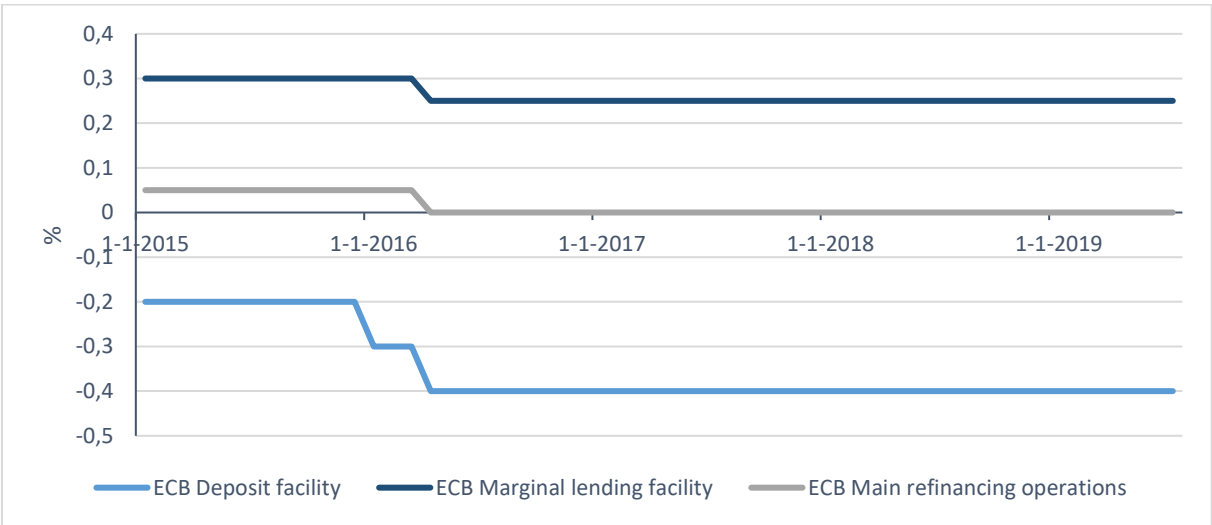
Figure 1: Dutch general government debt and general government balance, 2015-2018.



Source: CPB, March 2019

Since 1 January 2015, policy interest rates<sup>18</sup> set by the ECB virtually remained unchanged. The latest changes took place on 16 March 2016. Figure 2 below illustrates this. The middle line reflects the ‘main refinancing operations rate’, the interest rate at which financial institutions can refinance (0.00%) at the ECB. This is flanked by the interest rates that form a corridor or range around this important refinancing interest rate. At the upper end, this is the ‘marginal lending facility’ (0.25%) at which the ECB is prepared to lend money to financial institutions, and at the lower end, this is the ‘deposit facility’ with the interest rate (-0.40%) that the ECB will remunerate on balances deposited at the ECB by these same financial institutions. These policy interest rates are important instruments for the ECB to achieve its objective, namely an inflation rate below but close to 2% in the medium-term.

Figure 2: ECB policy interest rates.

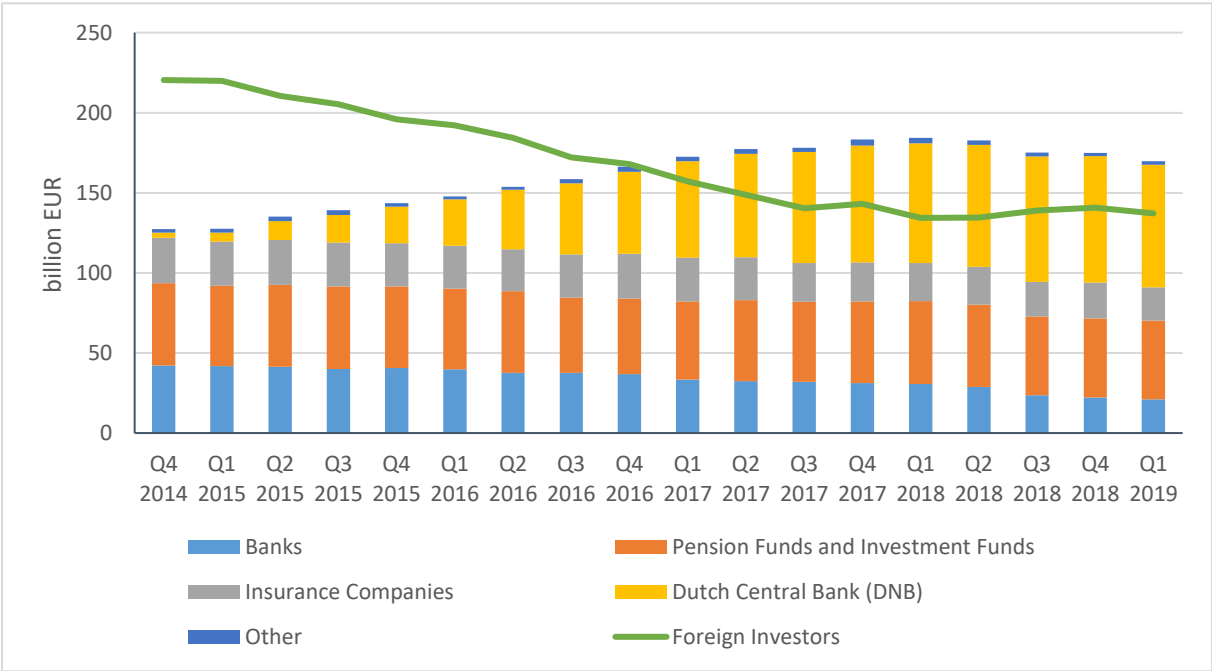


Source: ECB

<sup>18</sup> ‘Deposit facility’, ‘Marginal Lending Facility’ and the ‘Main refinancing operations’

Another important element of the policies pursued by the ECB in recent years, is the implementation of a number of ‘purchase programmes’<sup>19</sup>. The most important of these is the PSPP (Public Sector Purchase Program), which was launched in March 2015. This aims to provide liquidity to the market by buying up government bonds, in particular, from countries in the Eurozone. The total amount bought by the ECB in the PSPP amounts to €2,171,277 million at the end of December 2018<sup>20</sup>. At the same time, the Dutch share in this came to €115,183 million (5.3%). Since December 2018, the ECB stopped the net purchases under the APP<sup>21</sup> (Asset Purchase Programme). Since then, the amount will therefore no longer need to grow, but all maturing loans will be reinvested.

Figure 3: Ownership data of Dutch government bonds (broken down) by Dutch entities and foreign entities (no breakdown available), until Q1 2019.



Source: Dutch Central bank (DNB)

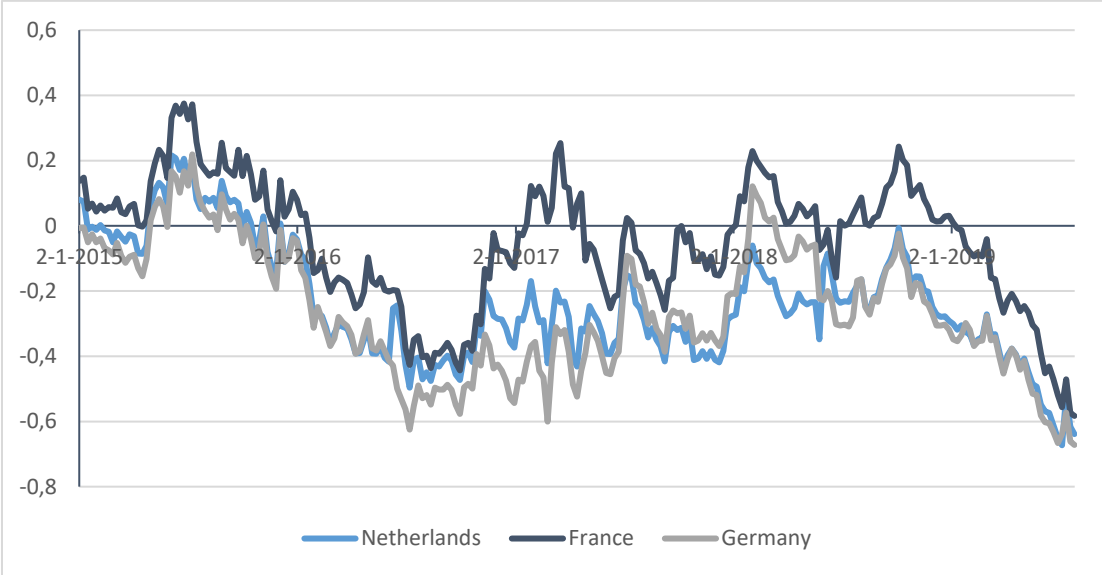
Figure 3 above shows the breakdown of the total accumulated volume per type of investor. Here the increasing share of DNB (Monetary) can clearly be seen, as a result of the purchases made as part of the PSPP. In the last quarter of 2018, the share of the Dutch government securities owned by DNB was exactly 25%. The proportion of Dutch debt owned by foreign investors has dropped from about 60% to 40% a result of the purchases done by DNB. The purchases done by DNB have a direct impact on the so-called 'free-float', i.e. that portion of the government bonds that, in principle, is available for trading. Nevertheless, Dutch debt securities, as yet, appear to be adequately liquid, as shown in paragraph 4.1.2.

The interest rate decreased continuously over the last decade. This is a worldwide phenomenon. Although many factors play a role (globalisation, less potential for growth, lower inflation, population ageing<sup>22</sup>), in Europe the expansionary policies of the ECB and their expectations have contributed to declining interest rates. This is also the case in the Netherlands. As shown in Figure 4 below, the Dutch

<sup>19</sup> For an explanation on the purchase programme, see Parliamentary Papers II, 2018-2019, 23 501-07 no. 1479.  
<sup>20</sup> <https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html#pspp>  
<sup>21</sup> APP stands for Asset Purchase Programme and relates to the ECB's entire purchase programme (of bonds in both the public sector and in the private sector).  
<sup>22</sup> See for example CPB, Financial Markets Risk Report – 2019, June 2019 (www.cpb.nl)

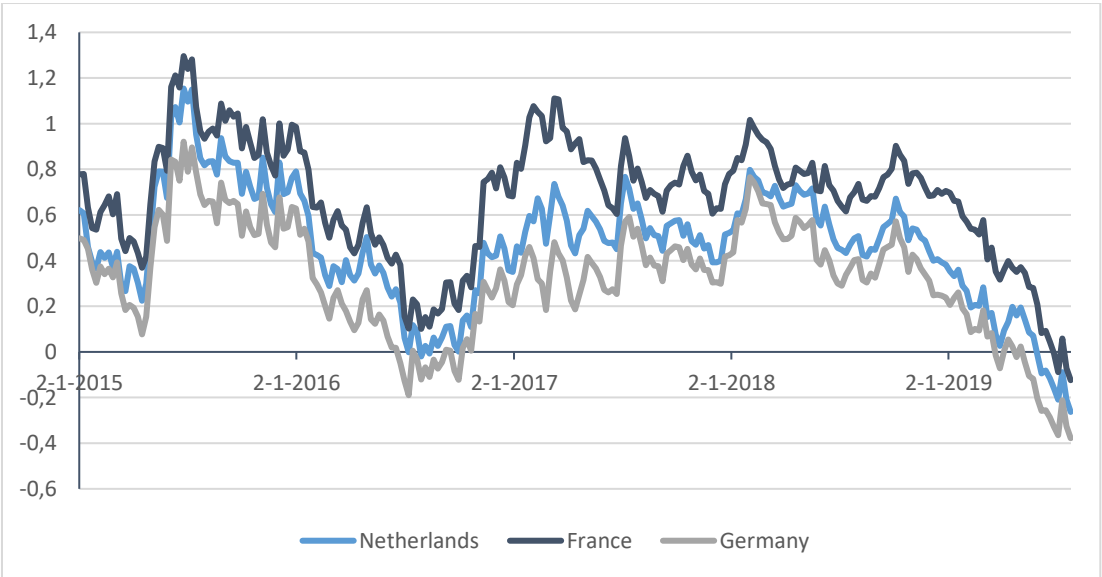
5-year interest rate has structurally been negative since the beginning of 2016 and volatility has increased in recent years. 10-year debt securities show a similar trend, albeit mainly with positive interest rates.

Figure 4: Development of interest rate on the 5-year DSL.



Source: The Dutch State Treasury Agency, Ministry of Finance, based on Bloomberg data

Figure 5: Development of interest rate on the 10-year DSL.



Source: The Dutch State Treasury Agency, Ministry of Finance, based on Bloomberg data

### 2.6 Summary

In the annual ‘Outlook’ every December, the DSTA presents the funding need for the following year, how this need is distributed between the money market and capital market and which instruments will be used. In the capital market, the DSTA uses DSLs (Dutch State Loans, government bonds), which are auctioned by DDAs (Dutch Direct Auctions) and tap auctions. In the money market, the DSTA uses instruments with variable maturities ranging from one day to twelve months. The instruments used

are DTCs (Dutch Treasury Certificates, treasury bills), CP (Commercial Paper) in euros or dollars, deposits and (reverse) repos (repurchase agreements).

Fluctuations in the funding need, in principle, are absorbed in the money market. Also, the DSTA may mitigate peaks in the day-to-day funding need by buying back DSLs with a residual maturity of 24 months or less. The DSTA may, under certain circumstances, place surplus cash in the DNB deposit account, for example, when the DSTA temporarily has a positive cash position, or when the DSTA wants to accumulate a positive balance in the run-up to large-scale redemptions and coupon payments.

The DSTA uses currency swaps to hedge currency risks and interest rate swaps to adjust the maturity of the debt portfolio, and therefore the interest rate risk.

For the distribution and promotion of DSLs, DTCs and CPs, the DSTA makes use of Primary Dealers (PDs). PDs are also used by the DSTA to provide advice on the issuance of new DSLs. The PDs – who are national and international financial institutions – are selected and contracted annually. They receive a fee for their performance.

The DSTA's annual funding need consists of redemptions of existing loans and the expected cash balance in the budget, in combination with the outstanding money market. The debt issuance in the period 2016-2018 decreased, which was mainly as a result of an improvement in the cash balance in these years. Also in the period 2016-2018, every year the funding need came out lower than initially estimated in the funding plan. This is the result of economic circumstances that were more favourable than expected, with higher tax revenue as a result, and lower government spending. This downward readjustment of the funding need for those calendar years was absorbed in the money market.

Also, the national debt interest expenditures decreased in the period 2016-2018, as a result of the declining debt as well as extremely low interest rates. With the early termination of long-term receiver swaps, in 2016-2018 the DSTA brought forward the future interest income totalling €10.2 billion. DSLs were also bought back in the period 2016-2018 for a total nominal value of €17.3 billion, which led to a total expenditure of €407 million in this period. Contrasting with this expenditure are lower interest expenditures in the years up to the original repayment date, because no interest is paid anymore on the DSLs that were redeemed early. The DSTA's other expenditures, for the largest part, consist of commission for the PDs and overheads such as personnel, ICT and equipment. In the years 2016, 2017, 2018, overheads amounted to €4.2 million, €4.6 million and €5.2 million respectively.

The present policy period was characterised by a strong Dutch economy, with growth being above or around the potential growth and a declining unemployment rate. In 2017, the general government debt was below 60% of GDP again and since then it dropped further to 52.4% in 2018. The general government balance rose to 1.4% in 2018. Since March 2016, the ECB's interest rate policy has remained unchanged with historically low rates still between -0.40% and 0.25% (position mid-June). The ECB's purchase programme within the context of the easing policy, has contributed to reducing interest rates on Dutch debt securities.



### 3 Risk Policy 2016-2019

This chapter starts with an overview of the most important risks facing the DSTA and how these are managed and mitigated. This is followed by a description of the risk policy for the period 2016-2019. That risk policy was fixed at the end of 2015 based on the 2015 policy review and which is the subject of this policy review. This risk policy is based on two major pillars that are dealt with in this chapter: (i) the funding policy; and (ii) the interest rate risk framework, which are dealt with in paragraphs 3.2 and 3.3. The description of these two pillars also describes the principles on which this policy is based.<sup>23</sup>

#### 3.1 The risk landscape

As described in paragraph 1.1, the objective of Article 11 mentions 'risk to the budget'. This refers to the extent to which (interest) costs rise unexpectedly and thus have an adverse effect on the budget. This risk is based on various types of risks. In the previously mentioned guidelines of the IMF and the World Bank, the following are considered as main risks: market risk (including interest rate risk and currency risk), financing and refinancing risk, liquidity risk, credit risk, settlement risk and operational risk. The extent to which a debt manager mitigates these risks depends on the preferred risk. This paragraph explains each of the risks mentioned and the way in which this is dealt with within the DSTA.

##### *Market risk: interest rate risk*

Market risk is the risk that debt management costs increase as a result of developments in the market, such as fluctuations in interest and exchange rates. Within the market risk, there is a distinction between interest rate risk and currency risk. The currency risk will be dealt with in the following paragraph. The interest rate risk relates to the risk that interest expenditures on the national debt rise due to changes in the interest rate. On average, the longer the maturity of the financial instrument, the lower the risk to the budget. After all, on average long-term financing, the portion of the national debt that should be refinanced annually and for which the interest rate should therefore be refixed, is lower. This means negative interest rate developments carry over less quickly into interest expenditures. However, the longer the maturity of a financial instrument, generally, the higher the interest costs. A long-term issuance has a higher interest rate than a short-term issuance, because investors generally charge a higher fee to lend money for longer. So, for debt financing there is a continuous trade-off between costs and risk. The interest rate risk framework which is set for a period of four years each time, is in fact a determination of the optimal balance considered at that point in time. Paragraph 3.3 discusses the interest rate risk framework in more detail for the period 2016-2019.

##### *Market risk: currency risk*

Currency risk is the risk that interest expenditures increase as a result of unfavourable developments in exchange rates. The DSTA also has to deal with exchange rates. After all, aside from issuances in euro, the DSTA also has limited issuances in foreign currency. This takes place in the money market for short-term maturities, mainly in Commercial Paper (CP), where American dollars, British pounds and Norwegian crowns and Swiss francs are possible. The DSTA also raises deposits in US dollars. Such money market instruments are valuable additions to the regular instruments in euros, because it leads to a wider group of counterparties and investors, it contributes to the diversification of instruments (and therefore a more solid market access), and contributes to lower costs. In addition, the DSTA issued bonds twice in US dollars in 2012. All issuances in foreign currencies are converted to euro with a currency swap (see paragraph 2.1), so that at the start of the transaction the funding costs are set in euros and the DSTA is safeguarded from currency risk.

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<sup>23</sup> In effect, these principles form the policy theory on which the DSTA's policy is based.

### *Financing and Refinancing risk*

It is important to have stable access to capital markets, in order to (re)finance debt at acceptable interest costs.

The DSTA envisages maintaining the stable access and the associated relatively low and stable interest rates, by assuming three core values in the funding policy: transparency, consistency and tradability (liquidity). This is dealt with in more detail in paragraph 3.2.1.

### *Liquidity risk*

Liquidity risk is the risk that a lot of money must be borrowed in a relatively short period of time due to (unexpected) cash expenditure, with possible consequences for the interest rate and other loan conditions. Just like the financing and refinancing risk, this risk is also managed with the funding policy (paragraph 3.2). Cash management (paragraph 2.1) and the role of the money market as a buffer, play an important role in this.

### *Credit risk*

Credit risk is the risk that arises if a counterparty does not comply with its payment obligations. The DSTA is exposed to credit risk when it temporarily places surplus funds with market participants. To minimise this risk, these parties are subjected to stringent credit rating requirements. Market participants must comply with minimum rating requirements. Also, the DSTA maintains limits for the size of the amounts placed with certain parties, based on the size of counterparties. In addition, the credit risk is limited by placing cash only for short periods (usually one day). Preferably, use is made of reverse repo transactions (secured deposits), for which collateral – mostly in the form of government bonds – is deposited at the DSTA (see paragraph 2.1). Due to the lower risk, such transactions may also have longer maturities, whereas a maturity of one day ('overnight') is common practice for unsecured deposits. If the counterparty, for whatever reason, does not comply with its obligations, the DSTA may convert this collateral into cash. The credit crisis has resulted in a further tightening of the rules. For example, unsecured money may be placed at most counterparties for a maximum of only one day. The DSTA may also, more so than in the past and under certain circumstances, place surplus funds at DNB.

The DSTA also runs credit risk on interest rate swaps and currency swaps. To mitigate this credit risk, only swaps may be entered into with extremely creditworthy counterparties with whom an ISDA (International Swap and Derivatives Association) agreement including a CSA (Credit Support Annex) has been concluded. This CSA stipulates that the counterparties of the swaps must deposit collateral (cash or government bonds) when the swap portfolio has a positive market value for the State<sup>24</sup>. The size of the required collateral is determined daily, based on the current swap rates<sup>25</sup>. The credit risk associated with swaps, as in the case for money placings, is also restricted by setting limits on the size of the swaps that the DSTA enters into with individual counterparties; in this way, concentration risk is restricted. Counterparties that have their rating below a certain level may be required to deposit additional collateral, the so-called 'independent amount'. When the rating continues to fall, the DSTA has the possibility to settle the portfolio at the prevailing market value at that time. These measures in particular envisage mitigating so-called 'tail risks' in which, in the unlikely event that a counterparty

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<sup>24</sup> The CSA, agreed between the Dutch State and its counterparties, does not require the State to deposit collateral with counterparties.

<sup>25</sup> The DSTA has decided to settle its derivative contracts in future through a central counterparty (CCP), namely Eurex. A CCP is a legal entity that places itself between both parties in a bilateral transaction and as a consequence, becomes the counterparty for both parties. Hence, the credit risk is shifted to the CCP. The CCP will therefore call upon both parties, including the DSTA, to deposit collateral in connection with the swap transactions made through the CCP.

can no longer comply with its obligations, the DSTA can keep its losses on that counterparty to a minimum.

#### *Settlement risk*

Settlement risk is a form of credit risk, which, for example, occurs in the period between the allocation of bonds and treasury bills to counterparties, and the moment that payment and delivery of the securities take place ('clearing' and 'settlement'). This risk is prevented by only delivering securities through the so-called 'payment versus delivery' principle. The transfer of money and securities take place through a clearing house in which the transfer is cancelled if either one of the two is not delivered. Another form of settlement risk is when a counterparty, for example, does not settle a deposit transaction or does not do so in a timely manner, which causes the cash position at the DSTA to differ from the prognosis and additional, last-minute transactions are possibly needed, or when a counterparty does not return collateral at the agreed time, for example, for a repo transaction. This form of settlement risk is a special kind of operational risk.

#### *Operational risk*

This concept includes risks that arise if errors are made at the time of entering into transactions or if the internal control systems, such as ICT, fail. This includes reputational damage, legal risks, breaches of security and natural disasters affecting the activities of a debt manager. This risk is managed through the structure of the organisation (separation of responsibilities) and internal control measures, both within the DSTA and within the Ministry of Finance.

#### Text box 3: Dutch State versus Deutsche Bank AG

##### *Dutch State versus Deutsche Bank AG*

In 2017, the Dutch State instituted legal proceedings against Deutsche Bank AG (DB)\* to clarify the interpretation of the International Swap and Derivatives Association (ISDA) contract, which contains agreements on derivatives\*\*. The reason for these proceedings was a difference of opinion about the negative interest compensation on collateral that DB deposits in cash at the Dutch State. The ISDA contract is governed by English law and it is for that reason that the proceedings were brought before the English court (Commercial Court). In the first instance, the court ruled against the State, to which the State appealed at the English Court of Appeal\*\*\*. On 2 May 2019, the English Court of Appeal ruled and again the State was unsuccessful. As a result of this ruling, the Minister of Finance sought legal advice on the probability of success for a further appeal. It appeared that this probability was limited and so the Minister for Finance decided not to appeal to a higher court.

\* Until recently, *Deutsche Bank was a Primary Dealer for the DSTA.*

\*\* *Parliamentary Papers, 2016/2017, 31935-IX no. 30*

\*\*\* *Parliamentary Papers, 2017/2018, 31935-IX no. 29*

\*\*\*\* *Parliamentary Papers, 2018/2019, 35000-IX no. 24*

## 3.2 Funding policy 2016-2019

As mentioned previously, the funding policy is one of the two pillars of the DSTA's risk policy for financing national debt, and it especially concerns the management and mitigation of the financing and refinancing risk and liquidity risk. The funding policy for the period 2016-2019 is described in this paragraph. Aspects that are discussed are the core values of the funding policy, flexibility within the funding policy and issuances in the capital and money market.

### 3.2.1 Core values: consistency, transparency and liquidity

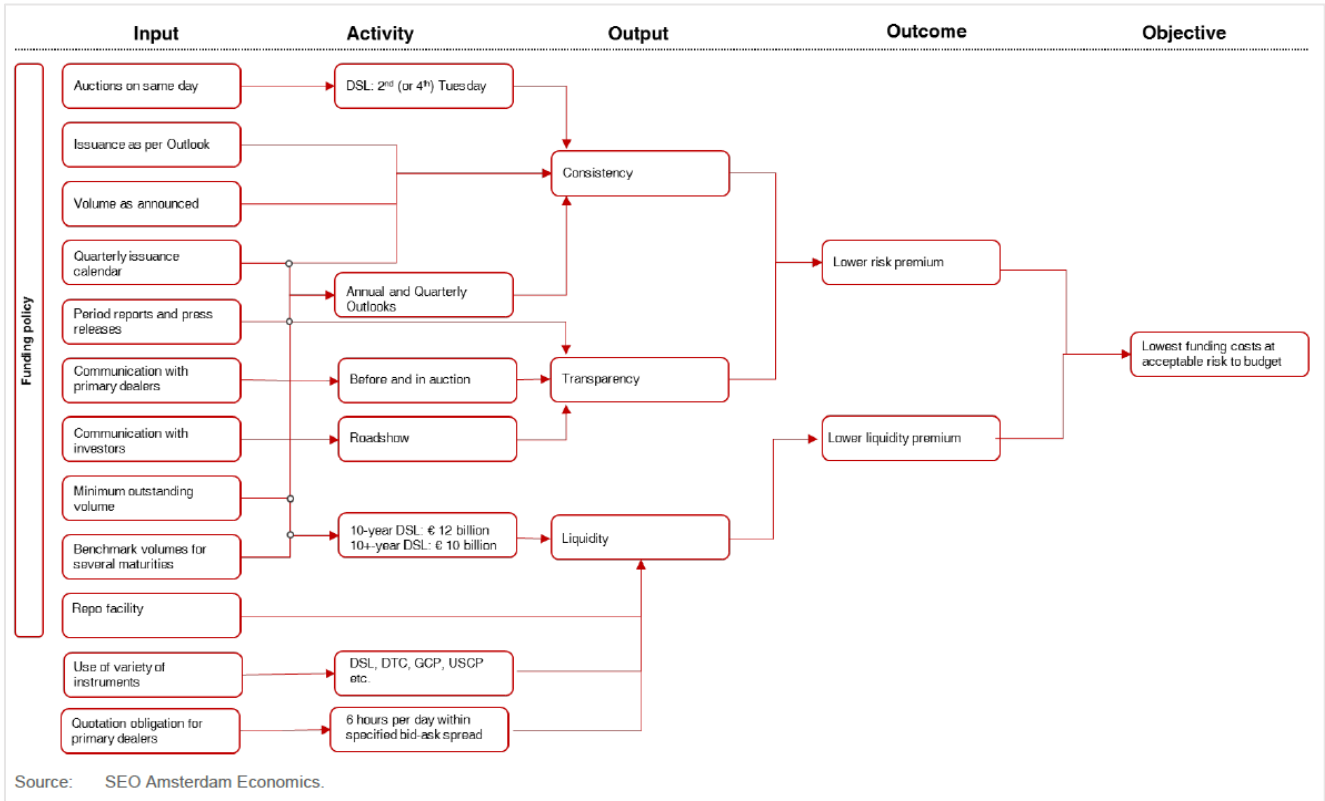
The funding policy consists of all the rules and preconditions applied by the DSTA in using financial instruments for financing national debt. It is not only the choice of debt instruments and their relevant maturity, but also, for example, communications to investors. The funding policy focuses on three core

values. These core values are based on the guidelines of the IMF and World Bank and are designed to contribute to lower funding costs at an acceptable risk for the Dutch State. These core values are:

- **Consistency.** The DSTA envisages being predictable and reliable in its issuances. An example of this is that the DSTA issues a DSL every year with a maturity of 10 years. The DSTA also uses fixed issuance dates for DTCs and for tap auctions of DSLs;
- **Transparency.** The DSTA is clear and open to market participants about the funding need as well as changes in the funding need and the debt issuances that it intends to do. During the annual Outlook event, for example, it is announced what the funding need for the coming year is and what the distribution will be between the money and capital market financing. Throughout the year, details of the loans to be auctioned are announced in a timely manner through press releases and the DSTA's website.
- **Liquidity.** The DSTA aspires for a high degree of liquidity, i.e. tradability of its issued instruments, so that Dutch government bonds are attractive to national and international investors. This is taken care of by pursuing a certain outstanding volume for every DSL (this is approx. €12 billion for the 10-year loan) and the quotation obligation for Primary Dealers. The first one ensures that, in every year for the next 10 years at least €12 billion worth of DSLs is outstanding. The quotation obligations ensures that DSLs can be traded every day, because the Primary Dealers are obliged to offer bid and ask prices for DSLs. The outstanding volume and quotation obligation help in establishing the 'market' for DSLs, which assures investors that the DSLs that they possess can also easily be sold again. As a result, investors are more likely to participate.

The DSTA's funding policy is illustrated schematically by SEO in Figure 6. The DSTA's activities ('input') are shown, which would collectively ensure a consistent and transparent funding policy and a high liquidity in the instruments issued. SEO argues that if this 'output' is reached, the outcome will be that the DSTA pays a lower risk and liquidity premium on its issuances. This premium means that investors require a higher return if bonds are seen as being more risky and/or are not easily tradable. The funding policy aims to minimize these premiums and thereby contribute to lower funding costs at acceptable risk to the budget. Paragraph 4.1 discusses to what extent this objective is achieved.

Figure 6: Schematic diagram of funding policy.



3.2.2 Flexibility within the funding policy

Within its core values, the DSTA tries to be as flexible as possible in its issuances, in order to be able to absorb changes in the funding need during the year for example. Since 2016, a range has been communicated in the funding plan for both the money market and capital market. As described above in paragraph 2.1, the range for the capital market represents a solid commitment for the DSTA, whereas the range for the money market is rather an indication than a commitment, as the money market is used as a buffer to absorb larger changes in the funding need. As the funding need has annually been lower in recent years than provided for in the funding plans, this has meant that the capital market issuances have often ended up at the lower end of the range previously communicated. The money market at the end of the year has absorbed the bulk of the lower funding need. In recent years, this has resulted in the size of the money market ending up below the range previously communicated. It was therefore possible to absorb the fluctuations in the funding need, as a result of windfalls or setbacks on the money market.

Another example of flexibility in issuances during the last policy period is the reduction of the committed issuance volume of new loans with maturities up to 10 years from €15 billion to €12 billion. This was started in 2018 to create more room for other issuances as the funding need has decreased in the past few years.

Flexibility can be at odds with consistency, one of the core values of the funding policy. SEO has investigated the influence of more flexibility on the core values. The findings of this investigation are discussed in paragraph 4.1.1.2. In general it can be said that there is a limited degree of latitude for the DSTA to be flexible in its issuances without compromising on consistency, transparency and the guaranteeing of liquidity. This degree of latitude is mainly limited in the event of a decreasing funding need, as more choices then have to be made about which instruments to use.

### 3.2.3 Capital market issuances under the funding policy

As mentioned previously, the DSTA issues a new 10-year bond every year; so too in the years 2016-2019. The Primary Dealers and other market participants attach great importance to this 10-year loan. This annual new issuance can therefore be seen as the cornerstone of the funding policy. The annual issuance of a 10-year DSL also contributes to the development and maintenance of a yield curve with a maturity of up to 10 years.

Table 5: Issuances of new DSLs 2016-2019.

Initial Issuance	Loan	Maturity (years)
<b>22 March 2016</b>	DSL 0.5% 15 July 2026	10
<b>7 June 2016</b>	DSL 0% 15 January 2022	5
<b>7 February 2017</b>	DSL 0.75% 15 July 2027	10
<b>11 October 2017</b>	DSL 0% 15 January 2024	7
<b>13 March 2018</b>	DSL 0.75% 15 July 2028	10
<b>12 February 2019</b>	DSL 0.25% 15 July 2029	10
<b>21 May 2019</b>	DSL 0.50% 15 January 2040	20

Table 5 shows the issuances of new DSLs in the period 2016-2019. Aside from the annual 10-year DSL, three new issuances with other maturities have taken place in the capital market to encourage liquidity across the entire yield curve as much as possible:

- 5-year loan: 2016 saw the launch of a 5-year DSL. This maturity was chosen because, at that time, there was a high demand in the market for a 5-year loan (more than for a 3-year loan that was issued annually in the preceding years). In addition, a 5-year loan is better suited to the objective of extending the average maturity of the debt portfolio than a 3-year loan (see paragraph 3.3).
- 7-year loan: A 7-year DSL was launched in 2017. There were a number of reasons for this maturity: firstly, the aim to spread redemptions and funding needs in time. This 7-year loan would be repaid in 2024, which will increase the funding need in that year. At that time, in 2024 only the redemption of a 10-year loan was scheduled, whereas surrounding years already saw more than one redemption. Secondly, this issuance fits in well within the objective of the interest rate risk framework to extend the maturity of the portfolio, because a maturity of 7 years is somewhat longer than the usual 3 or 5-year loans in the preceding years. Finally, the issuance of only a new 10-year loan and 7-year loan in 2017 (and not a 3-year loan as well) offered the option to use the remaining room for capital market issuances for tap auctions of previously issued DSLs with a maturity of longer than 10 years to encourage liquidity at the far end of the curve.
- 20-year loan: in 2019, a 20-year DSL was issued in the form of a green bond. This maturity of 20 years fits in with the aspiration to issue a long-term loan every four to five years, to support the curve 'at the far end'.

In addition to issuing new loans, existing loans can also be reopened by means of previously mentioned tap auctions. With reopenings of existing DSLs, the liquidity of DSLs with specific maturities can be improved, because the outstanding volume of the particular DSL increases. Table 6 shows an overview of tap auctions that took place in the period 2016-2019. This relates to DSLs that were already issued prior to 2016<sup>26</sup>.

<sup>26</sup> This table does not include reopenings of DSLs launched in the period 2016-2019.

Table 6: Reopening of existing DSLs issued prior to 2016.

DSL (matures in)	2016	2017	2018	2019
2023				x
2033	x	x		
2037	x		x	
2042			x	
2047	x	x	x	

### 3.2.4 Money market issuances under the funding policy

Treasury bills, i.e. Dutch Treasury Certificates (DTCs), are an important part of the DSTA's total money market financing. As described in paragraph 2.1, DTCs are auctioned in accordance with an issuance calendar on the first and third Monday of the month. Up to two programmes are auctioned per auction date. As the money market acts as a buffer for the Dutch state, in the period 2016-2019 the declining funding need led to a decrease in the total extent of the required money market funding. This had an impact on the DTC programme. For example, the auctioned volume steadily decreased in recent years. Where DTCs valued at more than €53 billion were placed in 2016, it was estimated that treasury bills worth approximately €44 billion would be auctioned in 2019. Also, there was a considerable drop in the number of auctions in this period, from 46 in 2016 to an expected 33 in 2019.

After its issuance of DSLs and DTCs, the DSTA has to manage a residual balance (cash deficit or surplus) that must be borrowed or lent. The DSTA uses various money market instruments for this purpose, as described in paragraph 2.1. Aside from DTCs that are issued in accordance with an issuance calendar communicated in advance, money market products are relatively flexible in nature. For example, other money market instruments which include commercial paper and deposits, are used without taking into account any restrictions regarding maturity, volume or time of issuance. Use of these products take place within the possibilities of the interest rate risk framework (see below), mainly based on the various interest rates at which financing is possible and the estimated development of the cash balance. In so doing, an endeavour is made to raise or place money as cheaply as possible, without creating significant surpluses or deficits during that specific time period. In practice, this means that the other money market instruments (excluding DTCs) are mainly used for maturities from one day to up to one month.

In the period 2016-2019, aside from DSL and DTC issuances, the balance was mainly financed using commercial paper and deposits. In this period, Commercial Paper (CP) was mainly issued in USD (86%), followed by EUR (13%). The weighted average maturity amounted to twelve days. In recent years, the DSTA has significantly increased its use of CP, from €66 billion in 2016 to €172 billion in 2018. The total issuance in 2019, to date, amounts to almost €68 billion. The increase in the use of CP coincides with the introduction of USCP (United States Commercial Paper) in 2017. This instrument is ideal for very short maturities and is thus a good addition to ECP (Euro Commercial Paper). The fact that USCPs have very short average maturities, largely explains the higher volume: after all, refinancing is more frequent (rolled over). In the meantime, the share of USCPs is approximately half of the entire CP programme. In addition, short-term surpluses can currently be placed relatively easily at DNB (see paragraph 2.1), which means CP can be used more effectively to finance short positions. Financing with the help of deposits has decreased for some time, from €305 billion in 2016 to €173 billion in 2018, partly in favour of commercial paper. However, the DSTA has made more use of deposits denominated in USD. Currently, 38% of borrowed money has been raised with deposits in USD, as opposed to 3% in 2016.

In recent years, the average maturity for placing and raising money using deposits has been two to three days.

In the past few years the DSTA has tried to introduce more flexibility in DTC issuances. Thus it was decided, because of a tight funding need and requests from the market in the years 2017 to 2019, to no longer issue any DTCs with a maturity date at the end of December. This change of standard policy was communicated to investors in advance. Moreover, at the end of 2018 it was decided to reopen the current DTC programme until the end of January 2019 again and to deviate from the usual issuance calendar. This decision was taken in response to an increased funding need at the beginning of January and to provide the market with liquidity. In the period 2016-2019 and at the request of investors, it was also decided to bring the maturity date of some DTC programmes forward by a few days.

**3.3 The interest rate risk framework 2016-2019**

The current interest rate risk framework for the period 2016-2019 entered into force in 2016. The basis for this new framework was the desire to extend the average maturity of the debt portfolio (including swaps). This desire was prompted by the increased level of debt and historically low interest rates. This resulted in costs for extending to be relatively low. Similarly, the 2015 policy review also contained a recommendation that the new interest rate risk framework should be less dependent on interest rate swaps and it was recommended to define clear risk and cost criteria.

Although the historically low interest rates led to lower costs on extension, at the same time they led to a situation in which relatively large interest rate rises are possible: the potential scale of an upward interest rate shock is larger than for the higher interest levels in the past. Hence, the precondition was set that more risk was not allowed in the new interest rate risk framework than under the 2008-2015 framework.

**3.3.1 Two risk indicators: average maturity and RA**

While keeping the above in mind, two risk indicators were established for the interest rate risk framework for the period 2016-2019. These two indicators are (i) the refixing amount (RA) and (ii) the average maturity of the debt portfolio (including swaps). As noted previously, the average maturity says something about the trade-off between costs and risk in the long term: generally it can be expected that the longer (shorter) the maturity of the debt, the lower (higher) the interest rate risk, but the higher (lower) the interest expenditures. The RA is that part of the debt and swap portfolio on which the interest rate must be refixed within twelve months, expressed as a percentage of the debt. So, the RA says something about the risk in the short term. Here, the implicit hypothesis is that by using these two indicators, automatically an efficient portfolio would be achieved, i.e. a portfolio with the lowest possible costs at a risk that is equal to or lower than the risk inherent to the policies in the preceding period.

For these indicators, the following values were pursued in the period 2016-2019:

- (i) For the RA, a maximum of 18% applies.
- (ii) The average maturity in the period 2016-2019 is gradually being extended to an average maturity of 6.4 years at the end of 2019, according to the following schedule (which allows for a range of 0.25 years):

Table 7: Targeted average maturity 2016-2019.

	Year-end 2016	Year-end 2017	Year-end 2018	Year-end 2019
<b>Intended maturity</b>	5.5 years	6.0 years	6.3 years	6.4 years



To establish the targets for these indicators, in the development of the interest rate risk framework 2016-2019, a maturity analysis was performed on those portfolios in 2015 that (in the long-term and in equilibrium) could be achieved without the use of swaps. Moreover, on determining the optimal maturity, this only included portfolios that have a lower risk than the portfolio which would have arisen if the former policy had been continued. Of these portfolios, the portfolio with an average maturity of 6.4 years had the lowest costs. In theory, the maturity of 6.4 years can be achieved in several ways: for example, by only issuing debt securities with a maturity of 12.8 years (and thus an average maturity of 6.4 years for the portfolio). A combination of a very long-term debt and a large money market (short-term debt) would also be possible to achieve an average of 6.4 years. A money market that is too large, however, could result in a high short-term risk for the budget. As the maturity of money market instruments is a maximum of one year, the entire money market, by definition, would have to be refinanced within a year. This entails the risk that a sudden rise in the interest rate could lead to significantly higher interest expenditures in the short-term. To keep this short-term risk limited, the refixing amount was introduced in 2016, which has a ceiling of 18% of the debt: the maximum amount of debt on which the interest rate has to be reset in the coming twelve months<sup>27</sup>. The idea is that this is still an acceptable interest rate risk for the budget in the short-term. This maximum is based on the level of €370 billion of debt at the end of 2015, the usual annual redemptions of two DSLs of €15 billion each, and the size of the money market of €25 billion<sup>28</sup>. In addition, the 18% offers room to absorb a budgetary shock of 3% of the national debt (about 1.5% of GDP).

The targets for RA and average maturity can be seen as a reflection of the Dutch state's preferred risk for the period 2016-2019. On determining these values of 18% and 6.4 years at the end of 2015, it was taken into account that higher than expected interest expenditures, for example as a result of unexpected interest rate fluctuations, are perceived more negatively than windfalls. It is partly due to this that the interest rate scenarios calculated in 2015, were somewhat conservative.

### 3.3.2 Risk indicator values achieved

Table 8 below shows the outcomes for the maturity and the RA achieved in 2016-2018 and the expected value for 2019. It shows that to date the indicators have complied with the targets. This is also expected to be the case in 2019.

Table 8: Maturity and refixing amount (RA) achieved in 2016-2019<sup>1</sup>.

	Year-end/over 2016	Year-end/over 2017	Year-end/over 2018	Year-end/over 2019
<b>Maturity</b>	5.6 years	6.0 years	6.3 years	6.5 years
<b>Refixing amount</b>	15.3%	15.4%	13.7%	13.7%

<sup>1</sup>2019 is the position expected at the end of the year.

The development of both indicators is partly influenced by the composition of the debt (money market versus capital market). As mentioned before, the maturity of the money market, by definition, is less than a year, which means the entire money market is included in the RA. A larger money market therefore means a higher RA. The average maturity would decrease with a larger money market, because the proportion of short-term debt increases in relation to the total national debt. Conversely,

<sup>27</sup> There is no minimum RA. This does not mean that the RA would be zero at any time, considering the intention to maintain a liquid money market.

<sup>28</sup> Experience has shown that a money market with a level of €20 to €25 billion (average of 6 DTC programmes of about €4 billion) guarantees sufficient liquidity.

a smaller money market generally means a lower RA and a longer maturity. That is what the situation has been in the recent past.

The issuance of DSLs has had a significant effect on the interest rate risk indicators. Through DSL issuances (that have a maturity of longer than one year) the money market decreases and the capital market increases; the money and capital markets actually work as communicating vessels. DSL issuances have, by definition, an extending effect on the average maturity and a lowering effect on the RA.

The cash balance in the budget can also have a significant impact on the indicators. Developments in the cash balances, after all, are primarily absorbed in the money market, which acts as a buffer. A positive cash balance reduces reliance on the money market (with a smaller RA and longer maturity) and a negative cash balance increases reliance on the money market (causing the RA to increase and maturity to decrease).

Buy backs of DSLs only have a limited effect on maturity and RA. The DSTA only buys back DSLs with a residual maturity of up to 24 months as part of its cash management. Actually, this means that capital market is converted into money market. If the residual maturity of the DSLs is longer than twelve months, the RA is increased. Buying back DSLs will always reduce the maturity, but only to a limited extent.

The issuance and buy backs of DSLs is not primarily done to adjust the maturity and RA. In addition, the cash balance (in the budget) is an external parameter for the DSTA. Instead, the DSTA uses interest rate swaps (see paragraph 2.1). Payer swaps extend the maturity and decrease the RA, while receiver swaps shorten the maturity and increase the RA. Considering the purpose of extending the maturity over 2016-2019, one of the possibilities was to enter into payer swaps. However, considering the recommendation in the 2015 policy review to reduce dependency on swaps, the choice was made to unwind (terminate early) existing receiver swaps instead. This has virtually the same effect as entering into payer swaps: the maturity is extended and the RA decreases. During 2016-2018, it was continuously monitored how many swaps had to be terminated early and what their average maturity should be.

The 2016-2018 annual reports substantiated which factors contributed to the achievements of the interest rate risk indicators. Table 9 clearly shows this as the specific impact of the cash balance, DSL issuances, DSL buy backs and early terminations of receiver swaps can be seen. It explicitly shows that the DSTA's common practice, namely to respond to the cash balance and be active in the capital market with DSL transactions, has an impact on the interest rate risk indicators and that adjustments can be made through swap transactions. In this case, receiver swaps were terminated early to further increase the average maturity and to decrease the RA sufficiently.

Table 9: Impact of cash balances, DSLs and swap transactions on maturity and refixing amount

	Maturity (in years)	Refixing amount (in %)
<b>Value at 1 January 2016</b>	<b>5.3</b>	<b>12.7</b>
<b>Value at year-end/over 2016 only for money market financing and a zero cash balance</b>	<b>4.4</b>	<b>21.2</b>
<i>Effect of cash balance</i>	-0.0	0.1
<i>Effect of DSL issuances</i>	0.7	-4.4
<i>Effect of DSL buy backs</i>	-0.0	0.7
<i>Effect of early termination of receiver swaps</i>	0.6	-2.3

<b>Result at year-end/over 2016</b>	<b>5.6</b>	<b>15.3</b>
<b>Value at 1 January 2017</b>	<b>5.6</b>	<b>17.0</b>
<b>Value at year-end/over 2017 only for money market financing and a zero cash balance</b>	<b>4.8</b>	<b>26.0</b>
<i>Effect of cash balance</i>	<i>0.3</i>	<i>-4.0</i>
<i>Effect of DSL issuances</i>	<i>0.8</i>	<i>-5.7</i>
<i>Effect of DSL buy backs</i>	<i>0.0</i>	<i>0.1</i>
<i>Effect of early termination of receiver swaps</i>	<i>0.2</i>	<i>-1.0</i>
<b>Result at year-end/over 2017</b>	<b>6.0</b>	<b>15.4</b>
<b>Value at 1 January 2018</b>	<b>6.0</b>	<b>16.3</b>
<b>Value at year-end/over 2018 only for money market financing and a zero cash balance</b>	<b>5.1</b>	<b>25.0</b>
<i>Effect of cash balance</i>	<i>0.2</i>	<i>-3.9</i>
<i>Effect of DSL issuances</i>	<i>0.6</i>	<i>-4.2</i>
<i>Effect of DSL buy backs</i>	<i>0.0</i>	<i>0.1</i>
<i>Effect of early termination of receiver swaps</i>	<i>0.5</i>	<i>-3.3</i>
<b>Result at year-end/over 2018</b>	<b>6.4</b>	<b>13.7</b>

### 3.3.3 Early termination of swaps

As explained in the previous paragraph, early termination of swaps is used to steer risk indicators, based on target values. The table below shows the nominal amounts at which receiver swaps were terminated per year, by year of maturity. The last row shows how much collateral was released as a result of early terminations. The release of collateral has an effect on the RA and the maturity. Collateral is in fact short-term debt, on which an overnight interest rate is paid. This means that collateral is part of the RA. When collateral is released, the RA decreases and maturity increases. The fact that the released collateral was relatively low in 2018, is because the maturity of swaps which were terminated early was relatively short (and, therefore, the market value of the swaps was lower). As the maturity of swaps was much higher in 2016, the realised market value was relatively high.

Table 10: Volume of early termination of receiver swaps (by year of maturity), including released collateral (in € billion).

Year of maturity	2016	2017	2018
2021	-	-	6.17
2022	-	-	3.00
2023	-	-	2.00
2024	-	-	4.60
2026	0.05	0.23	1.08
2027	1.93	02:53	2.03
2028	0.33	-	1.01
2033	-	0.50	-
2035	2.69	-	-
2036	0.89	0.10	-
2037	1.55	-	0.25
2042	1.95	0.73	0.13
<b>Total nominal volume</b>	<b>9.38</b>	<b>4.09</b>	<b>20.25</b>
<b>Released collateral</b>	<b>5.57</b>	<b>1.65</b>	<b>3.11</b>

### 3.4 Summary

Pursuant to Article 11 of budget chapter IX, the financing of national debt should take place at the lowest possible cost and at acceptable risk to the budget. The risks that the DSTA mainly has to deal with are interest rate risk, currency risk, financing and refinancing risk, liquidity risk, credit risk, settlement risk and operational risk. To mitigate and manage these risks, the DSTA uses a risk policy, and in so doing, makes use of the internationally accepted guidelines of the IMF and World Bank. This risk policy is based on two pillars: (i) funding policy and (ii) interest rate risk framework. The funding policy includes all the qualitative preconditions set by the DSTA for the choices of debt instruments, the various maturities and issuance moments and relevant communications. In this, the DSTA maintains three core values that must contribute to the objective of Article 11, namely consistency, transparency and liquidity. At the same time, the DSTA tries to be reasonably flexible, to be able to respond to a changing funding need or market needs. As a result, the DSTA has been maintaining ranges of several billions in its communication of the funding need and capital and money market volumes, and has reduced the level of the committed issuance volume of DSLs with a maturity of up to 10 years from €15 billion to €10-€12 billion.

Also in the 2016-2019 period, the annual issuance of a 10-year DSL in the capital market was considered a cornerstone of the funding policy: the idea is that due to an annual issuance of this DSL, a yield curve is maintained with liquid DSLs with a maturity of up to 10 years. Market participants attach great importance to this 'benchmark' loan as a reference for other financial products. To maintain the yield curve in other maturities too, new 5-year, 7-year and a 20-year loan were also issued in 2016-2019. In so doing, the 20-year loan became the first green bond that was placed by the Dutch state. In 2016-2019, a total of nine tap auctions took place of five different DSLs which were issued before 2016.

In the period 2016-2019, DTCs were auctioned in the money market on the first and third Mondays of the month in accordance with an issuance calendar. The total money market financing decreased in this period due to the declining funding need, in which the money market acted as a buffer. The number of DTC auctions dropped from 46 in 2016 to an expected 33 in 2019 and the auctioned volume of DTCs decreased from more than €53 billion to an estimated €44 billion. Other money market instruments used in this period are Commercial Paper (CP) and deposits. Use of CP has increased from €63 billion in 2016 to €164 billion in 2018 and the weighted average maturity was twelve days. In the process, the USCP share increased to approximately 50% of the entire CP programme. Use of deposits has decreased from €86 billion in 2016 to €58 billion in 2018, and has a weighted average maturity of 3-4 days. Moreover, the DSTA has made more use of deposits in USD.

In DTC auctions, the DSTA has tried to introduce some flexibility in the past period, by bringing forward the maturity date of a few DTC programmes at the request of investors, and in deviation to the issuance calendar, to reopen another programme than envisaged in the first instance.

To manage the most important risk in debt financing for the budget, the interest rate risk, an interest rate risk framework with two quantitative indicators was introduced in 2016: the average maturity and the refixing amount (*RA*). The average maturity is an indication of the trade-off between risk and costs on the long term. As a general rule, interest costs increase for longer maturities. The *RA* pertains to the risk in the short-term: it relates to that part of the debt and the swap portfolio for which the interest rate must be refixed within twelve months, as a percentage of the total debt. Based on the portfolio analysis in 2015, targets were established for maturities and *RA* for 2016-2019, where the wish was to extend the maturity and to reduce the dependency on swaps. The weighted average maturity would be extended to 6.4 years at the end of 2019. In this period, the *RA* was allowed a

maximum of 18%. These targets therefore reflect the preferred risk of the Dutch state for the period 2016-2019.

The values achieved in 2016-2018 and expected in 2019 are shown below, indicating that the targets have been met. Particularly the issuance of DSLs and the early termination of receiver swaps have had an extending effect on the maturity and a lowering effect on the RA. Also, the purchasing of DSLs which expire within 24 months, has the same effect, albeit to a lesser extent.

	Year-end/over 2016	Year-end/over 2017	Year-end/over 2018	Year-end/over 2019
<b>Maturity</b>	5.6 years	6.0 years	6.3 years	6.5 years
<b>Refixing amount</b>	15.3%	15.4%	13.7%	13.7%

## 4 Policy assessment 2016-2019

### 4.1 Implementation of funding policy

This paragraph assesses how the funding policy was implemented. It focuses on the way in which the DSTA has implemented its three core values that are described in chapter 3: consistency, transparency and liquidity. It was examined to what extent the pursued policy falls in line with previously mentioned guidelines of the IMF and World Bank. An international comparison is also made. The assessment is based on the core values divided into two sections: paragraph 4.1.1 addresses consistency and transparency and paragraph 4.1.2. addresses the core value liquidity.

#### 4.1.1 Consistency and transparency

In its report, SEO shows that there is no clear criterion to measure consistency and transparency in the policy of a debt manager. By contrast, it is possible to compare the pursued policy to a benchmark, such as the IMF and World Bank guidelines. According to the IMF,<sup>29</sup> greater predictability in the timing of debt issuances by the government reduces uncertainty for investors, and this lowers the risk premium on government debt. This contributes to a higher demand for government debt from investors, which ultimately leads to lower interest expenditures. Transparency and consistency of announcements prior to debt issuances – on type of loan, coupon and auction rules – also contribute to lower risk premiums, according to the IMF. The IMF and World Bank guidelines state that transparency is important, because it reduces uncertainty about future funding plans. The effectiveness of the policy pursued can therefore be strengthened if the envisaged goals and instruments used are made public. In addition, this strengthens the DSTA's 'accountability'. If the DSTA is transparent about its funding plan and is consistent in its implementation, then this benefits the DSTA's reputation.

##### 4.1.1.1 Policy instruments for consistency and transparency

The following are a few examples of policy instruments for consistency and transparency mentioned by IMF and World Bank.<sup>30</sup> All these policy instruments ensure that sufficient information on managing and financing national debt is known to investors, which reduces the uncertainty. It can be expected that consistency and transparency have a strengthening effect on each other.

Policy instruments for improvements to consistency.

1. The issuances of bonds at regular times during the year.
2. The issuances of new benchmark bonds every year.
3. Announcing a target volume for the total number of bonds to be issued per year, as well as a target volume per bond and also per auction.
4. To ensure that this target volume is achieved.
5. Implementing the funding policy in accordance with the risk management framework, and not to deviate from this for the benefit of short-term benefit at the expense of an increase in risk.

Policy instruments for improvements to transparency:

1. Publicise debt management goals.
2. Publish a funding plan for the upcoming year in a timely manner.
3. Announce auction dates and details as early as possible.
4. Publish periodic updates of the funding need.
5. Publish auction results.
6. Clearly describe the auction procedure.

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<sup>29</sup> Jonasson, T., & Papaioannou, M. (2018), A primer on managing sovereign debt portfolio risks. IMF Working Papers 18/74.

<sup>30</sup> Jonasson, T., & Papaioannou, M. (2018)

7. Frequently communicate with PDs and investors about the funding plan and auction details.
8. Publicise the intention of the derivatives portfolio and the associated statistics.

SEO concludes<sup>31</sup> that the policy instruments used by the DSTA for the purpose of improving consistency and transparency, are in accordance with these guidelines and the literature on debt management. For example: the DSTA places debt regularly and at fixed times at auctions, announces relevant information in a timely manner, and then carries out the auction as announced. In addition, the DSTA informs its investors and PDs about the funding need and the issuance calendar in its quarterly reports and the annual Outlook in December. The DSTA is also consistent in its funding policy, for example, through issuing a 10-year loan every year.

#### 4.1.1.2 Flexibility

Although flexibility in issuances can be at odds with the core values consistency and transparency, the flexibility in issuances has also become more important for the DSTA, because of the lower funding need and the fact that the funding need, more so than in the past, ends up significantly higher or lower than communicated in advance. Flexibility can also help to respond quicker to market developments with issuance choices. For example, the choice can be made to fix auction dates at shorter notice (such as for the DDA) and having issuances tying in better with the needs of market participants (for example, by announcing the specific loan to be auctioned closer to the auction date). This allows the DSTA to take advantage of favourable market circumstances (mainly low interest rates due to high demand for a certain maturity), but, conversely may also lead to a higher risk premium through compromising on transparency and predictability. In short, on formulating the funding policy, a balance must be sought between consistency and transparency on the one hand and flexibility on the other.

SEO mentions that the DSTA has become more flexible during the current policy framework 2016-2019. In its communications, the DSTA now maintains a range for the volume of issuances in the capital market, instead of an exact target volume. The DSTA remains consistent in complying with this range. A range is also given for issuances in the money market (volume at the end of the year), but the DSTA communicates that this is only an indicative range in respect of the firm commitment on the range in the capital market. If the funding need during the year is significantly lower (higher) than estimated in advance, then the volume of the money market will be lower (higher) than the range estimated in advance. This has been the case over the recent past, as is also discussed in paragraph 2.2. Another example of the slightly larger flexibility in the money market in relation to the capital market is that in 2018, the DSTA decided to bring the expiration date of one of the DTC programmes forward somewhat, because investors preferred this. The DSTA has been consistent in issuances, however, on the auction dates communicated in advance, according to SEO.

SEO has used two methods to examine whether the switchover to ranges for capital market issuances (more flexibility for the DSTA, but less certainty for investors) has caused higher risk premiums on the issuances. On the basis of a regression analysis based on an existing model developed by Afonso, Arghyrou and Kontonikas (2015),<sup>32</sup> SEO examined the yield spreads of Dutch and German 10-year loans. SEO concludes that the transition to ranges for the DSTA has had no significant effect. This finding has been confirmed by means of a different methodology that SEO used, based on a synthetic control method developed by Abadie, Diamond & Hainmueller (2010),<sup>33</sup> in which no significant

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<sup>31</sup> 'Assessment of DSTA's 2016-2019 Risk Framework and Funding policy', SEO, 2019. For actual examples about other countries, reference is made to this study. The policy review specifically discusses the situation in the Netherlands.

<sup>32</sup> Afonso, A., Arghyrou, M., & Kontonikas, A. (2015). The determinants of sovereign bond yield spreads in the EMU. ECB Working Paper Series No. 1781, 1-39, as described in paragraph 4.1.3 of the SEO report.

<sup>33</sup> Abadie, A., Diamond, A., & Hainmueller, J. (2010). Synthetic control methods for comparative case studies: Estimating the effect of California's tobacco control program. *Journal of the American Statistical Association*, 105(490), 493-505, described in paragraph 4.1.3 of the SEO report.



difference in the yield spread was found either after the switchover to a range for issuances in the capital market.

#### 4.1.2 Liquidity

A liquid market for national debt facilitates access to financial markets and thereby future debt financing<sup>34</sup>. This reduces the refinancing risk. In addition, liquidity raises the tradability of debt securities, so a wider group of investors is reached and investors charge a lower liquidity premium. For example, investors with a short-term investment horizon are more likely to buy long-term securities under better liquidity circumstances. The IMF and the World Bank endorse the importance of liquidity and state in their guidelines that “debt managers should pay attention to maintaining liquidity and transparency to the extent possible in the secondary market”.

##### 4.1.2.1 Policy instruments for liquidity

Literature<sup>35</sup> refers to some instruments to encourage liquidity, including:

1. At every auction, ensure a sufficient volume of issuances to prevent concentration in ownership.
2. Select Primary Dealers based on, inter alia, activities in secondary market activities.
3. At auctions, cap the volume purchased by each Primary Dealer, to prevent concentration in ownership.
4. Consistency and transparency ensure a better provision of information and pricing and therefore contribute to liquidity in the secondary market.
5. Issuances of ‘benchmark bonds’ safeguard a minimum level of liquidity, because every year a minimum volume is traded.
6. A quotation obligation for Primary Dealers benefits the tradability of debt securities.
7. A security lending facility, such as a repo facility, reduces the risk of scarcity and facilitates trade in the secondary market.
8. The withholding of part of the announced auction volume increases the flexibility of financing activities, facilitates secondary market trading and provides an insight into supply and demand<sup>36</sup>.
9. The reopening of existing bonds provides additional liquidity at specific points of the yield curve and thus prevents prolonged scarcity.
10. With the help of a buyback programme, secondary market liquidity can briefly be improved. In addition, a buyback programme can be used to distribute liquidity across the yield curve and over time.
11. A programme known as Separate Trading of Registered Interest and Principal of Securities (STRIPS) enables investors to separate coupon payments from the principal debt, making the debt securities more attractive for a larger group of investors. In this way, a STRIPS programme contributes to the liquidity.

SEO observed that all of the above instruments are used actively by the DSTA to promote the liquidity of government bonds, with the exception of withholding debt securities at auctions (point 8). Especially the annual issuance of a 10-year loan and the stringent quotation obligations contribute to a liquid secondary market, as is also confirmed by the PDs. SEO therefore concludes that the Dutch State complies with international standards on liquidity.

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<sup>34</sup> Jonasson, T., & Papaioannou, M. (2018).

<sup>35</sup> SEO refers to Jonasson, T., & Papaioannou, M. (2018); and to OECD (2018), *Sovereign Borrowing Outlook 2018*, OECD Publishing.

<sup>36</sup> At present, only one or two European DMO's make use of this instrument.



To be able to provide the secondary market with sufficient liquidity, it is also important that the liquidity conditions are monitored properly. Although there is no specific indicator for liquidity, in contrast to consistency and transparency, liquidity can better be assessed with various quantitative indicators, as is also evident in literature<sup>37</sup>. First of all, the difference between the bid and ask prices (the bid-ask spread) is a widely used indicator for transaction costs and hence tradability. A low bid-ask spread indicates lower transaction costs and higher liquidity. Besides, trade volumes give an indication of the depth of the market and the number of active traders. The trade volume in relation to the outstanding volume of the debt securities, better known as the turnover ratio, gives an impression of the trade frequency, in which a higher turnover ratio is equal to a more liquid market. The volatility of both trade volumes and costs should also be assessed. Above all, it is recommended that several indicators should be monitored, as the various indicators highlight other aspects of liquidity. The DSTA mainly monitors the difference in the bid-ask spread and trade volumes. SEO also concludes that this could possibly be expanded.

#### 4.1.3 International comparison

SEO also compared the working methods of the DSTA with those of a number of other European sovereign debt managers<sup>38</sup>. In so doing, SEO concludes that the DSTA is one of the most transparent sovereign debt managers in terms of communication with investors and PDs. The DSTA's quarterly reports and annual outlook not only contain information about the funding policy, but also the reasoning behind the decisions, the interest rate risk framework, economic and budgetary prospects, recent market developments and statistics. This also ensures that these publications are easy to understand for a wider audience.

According to SEO, in an international comparison, the DSTA also scores well as regards the predictability of debt issuances. In this comparison, all countries make use of an issuance calendar to announce their auction dates and auction details. The information value of these issuance calendars differ. At the beginning of the year, the German sovereign debt manager publishes a complete issuance calendar with all auction dates, specifications of the loans with maturities and also the target volume of the auctions. Other countries choose only to announce the auction dates in the issuance calendar, while the characteristics of the loan (specific loan, maturity and target volume) are announced only a few days before the loan, or they publish the auction dates at the beginning of the year, but reserve the right to cancel auctions. There are also countries who, just like the Netherlands, publish a quarterly indicative issuance calendar, but, in contrast to the Netherlands, they adjust the funding plan if the funding need or the funding policy changes during the quarter. Further, the DSTA would theoretically be able to cancel auctions if necessary, but in principle, the funding plan is implemented as described in the outlook and quarterly report. In the comparison, SEO concludes that the DSTA scores better on predictability and consistency than most other countries. The reason for this is that auctions and the characteristics of those auctions are announced in a timely manner, which, in principle, do not deviate from the funding plan communicated in the outlook. Having said that, all countries make the choices which, having regard to the own specific situation, are best suited to themselves. SEO finally concludes that, of all the European countries with the exception of Germany, the Netherlands pays the lowest interest rate on debt issuances. The consistent and transparent funding policy has probably contributed to this, according to SEO.

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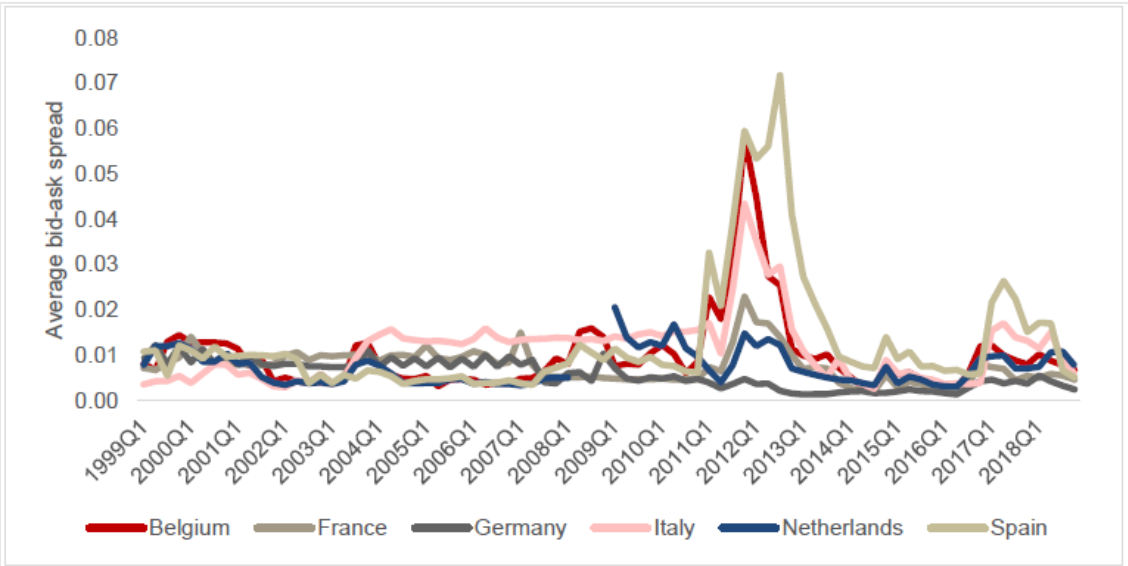
<sup>37</sup> Jonasson, T., & Papaioannou, M. (2018); and the OECD (2018)

<sup>38</sup> SEO also looked at Belgium, Germany, France, Italy, Portugal and Spain.

*Capital Market*

On the basis of quantitative analyses, SEO confirms that the Dutch market for government bonds is liquid in an international perspective. For example, in the period 1999-2018 there were relatively low bid-ask spreads in the Netherlands in comparison to other European countries, which indicates a relatively liquid secondary market. Only German securities – and to a lesser degree French securities – were more liquid in this period based on the bid-ask spreads. The Dutch market also appears to be resistant to shocks: during a period of increased market volatility in the first quarter of 2018, the Dutch bid-ask spreads rose the least compared to Germany. The figure below, derived from the SEO report, illustrates this graphically.

Figure 7: Dutch bid-ask spread (in %) compared with European countries.



Source: SEO Amsterdam Economics, based on Bloomberg data.

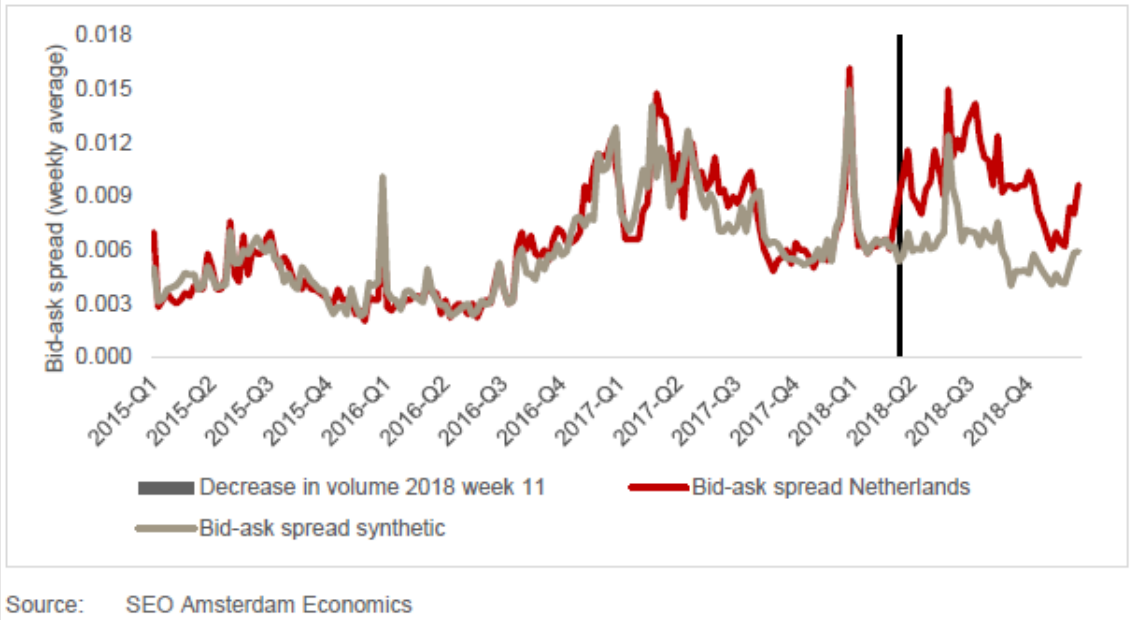
The average outstanding volume per bond is low in the Netherlands when compared with other European countries. This can lead to less liquidity, because in absolute terms, there are less securities available to trade in. The lower average outstanding volume per bond is not surprising in view of the lower absolute debt level. The absolute debt level of the Netherlands is low in a European perspective and largely explains the low outstanding volume per bond.

Although the liquidity of Dutch government bonds is presently found to be adequate by SEO, in making use of statistical analyses the SEO does show that a recent decrease in the level of outstanding volume of the 10-year loan (the benchmark level) from €15 billion to € 12 billion, has resulted in a statistically significant increase in the average bid-ask spread for 10-year debt securities by 0.4 basis points. By using the synthetic control method, SEO found this effect to be robust<sup>39</sup>. The analysis shows that after the introduction of the new 10-year bond, the average bid-ask spread rose from 0.6 to 1 basis point in week 11 of 2018. The figure below illustrates this graphically. This finding is remarkable because most of the PDs do not confirm this; according to them, a reduction from €15 to €12 billion has barely had an effect, if any, on the liquidity that they have observed in the market. That is also what the DSTA itself observes.

<sup>39</sup> Abadie, A., Diamond, A., & Hainmueller, J. (2010), described in paragraph 4.2.3 of the SEO report.

The number of outstanding bonds with an initial maturity of 10 years has no impact on the results. In a separate robustness analysis, again no significant effect was found of the volume of outstanding bonds on the average bid-ask spread and, by extension, liquidity.

Figure 8: Netherlands bid-ask spread (in %) compared with synthetic control group.



*Money market*

For the secondary market, the DSTA also applies policy instruments for Dutch Treasury Certificates that are in line with the above-mentioned international guidelines. For instance, this market is also subject to stringent quotation obligations and DTC auctions take place at fixed times, and the auction volume must comply with a prior communication of the range. This brings about a minimal outstanding volume for each DTC programme and promotes liquidity. By contrast, the period 2016-2019 is characterised by a steady decrease in the total auction volume and the number of DTC auctions during the year, as described in paragraph 3.2.4., due to a declining funding need and the money market as a buffer. Yet, for DTCs, at present the market for treasury bills seems to be sufficiently liquid; in the period 2016-2019 the quotation obligations set for PDs by the DSTA have been amply met (see paragraph 2.2), which provides an important contribution to liquidity. PDs confirm that the secondary market for Dutch Treasury Certificates at this time, according to them, is sufficiently liquid.

In recent years, the DSTA actively pursued guaranteeing sufficient liquidity in the money market in the event of a declining funding need. To provide the various DTC programmes with sufficient volume, the choice was made, among other things, to focus more on long-term treasury bills. Where a three-month programme was on offer on each auction date in 2016, this only happened once per two auctions in 2018<sup>40</sup>. In this period, the average outstanding volume per programme virtually remained unchanged. Further, it was decided to prioritise the various DTC programmes by assigning more volume at times of auction to programmes with higher demands. Due to the scarcity (low liquidity) in the secondary market, it was also decided in December 2018, to reopen treasury bills maturing in January 2019 again. Although this reopening took place at a standard time of auction, this programme was not part of the original planning for the fourth quarter. Conversely, in 2017 it was decided to abolish the unpopular DTC programme maturing at the end of December until further notice. Popularity of the various

<sup>40</sup> Yet, on every auction date in the period 2016-2018 a six-month programme was auctioned.

programmes is assessed on the basis of quantitative liquidity indicators (including bid-ask spreads), as well as comments from PDs and end investors.

A similar trend is visible in the European perspective. Countries where the debt ratio and funding need show a similar trend as that in the Netherlands, such as Sweden and Germany, have drastically reduced their issuance of treasury bills in recent years (like in Germany) by reducing the number of programmes and increasing the average outstanding volume per programme. In Sweden, 6% of the national debt consisted of treasury bills at the end of 2016. For a debt level that almost remained the same, the proportion of treasury bills amounted to only 2% at the end of 2018.

Although use of CP in particular increased over the past few years in the Netherlands, it is the DSTA's policy not to have this at the expense of DTC issuances and by extension, the liquidity of treasury bills in the secondary market. To achieve this, other money market instruments are only used to finance short-term maturities, which means the impact on the DTC issuances remains limited. For example, the maximum maturity of CP amounted to 49 days in the period 2016-2019<sup>41</sup>, while the minimum maturity of the auctioned treasury bills in the same period was 57 days.

#### 4.1.4 Interim conclusion

In assessing how the DSTA has put its three core values consistency, transparency and liquidity into effect in its implementation of the funding policy, SEO concludes that the policy instruments used by the DSTA are in accordance with the international guidelines of the IMF and World Bank. The DSTA announces its auctions in a timely manner and carries them out in accordance with the announcement. Also, the DSTA informs investors and PDs at set times on the funding need and issuance calendar. In addition, the annual issuance of the 10-year loan contributes to consistency.

In this policy framework the DSTA has maintained a little more flexibility in its funding policy, particularly by communicating ranges for the volume of DSLs instead of exact target volumes. On the basis of a regression analysis, among other things, SEO concludes that this form of flexibility has no significant impact on the yield spread, i.e. it has not led to higher risk premiums for the DSTA in the capital market.

SEO also concludes that the policy instruments used by the DSTA to support and promote liquidity, are in accordance with the international guidelines of the IMF and World Bank. The annual issuance of a 10-year loan and the stringent quotation obligations for PDs, have particularly contributed to liquidity.

By monitoring liquidity, the DSTA mainly observes the difference in the bid-ask spread and trade volumes. According to SEO, the DSTA could use a greater variety of indicators.

From a limited international perspective,<sup>42</sup> according to SEO, the DSTA is one of the most transparent debt managers where it concerns communications with investors and PDs. In comparison, the DSTA also acts more consistently and predictably than most other countries, according to SEO. Finally, SEO concludes that of all the European countries with the exception of Germany, the Netherlands pays the lowest interest rate on debt issuance and that the consistent and transparent funding policy has probably contributed to this.

SEO also confirms that in an international perspective, the Dutch market is liquid for DSLs and resistant to shocks: of the countries compared, the Netherlands' bid-ask spread rose the least during higher market volatility at the beginning of 2018. At the same time, an SEO quantitative analysis shows that the reduction of the volume of the 10-year loan from €15 billion to €12 billion has led to an increase

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<sup>41</sup> As already mentioned in paragraph 3.2.4 the average weighted maturity of commercial paper was 12 days in the period 2016-2019.

<sup>42</sup> Comparison with Belgium, Germany, France, Italy, Portugal and Spain.

in the bid-ask spread from 0.6 to 1 basis point, which is considered to be a significant rise and may indicate reduced liquidity. According to the PDs, the reduction from €15 to €12 billion has barely had an effect, if any, on the liquidity that they have observed in the market.

Due to the declining funding need and the role of the money market as a buffer, in the period 2016-2019 the DSTA has reduced both the number of DTC auctions and the total volume at auctions in the DTC market. In doing so, the DSTA has placed the focus on the issuance of sufficient volume for each DTC programme, so as to ensure the liquidity for treasury bills. Moreover, the DSTA has only used other money market instruments, such as Commercial Paper (CP) for the financing of shorter maturities (in the period 2016-2019 up to 49 days), so that the use of CP does not occur at the expense of DTC issuances. According to PDs, the market for Dutch Treasury Certificates is thus still sufficiently liquid.

## 4.2 Application of interest rate risk framework

### 4.2.1 Consistency in average maturity of risk indicators and RA

In the previous policy review of 2015, it was recommended to define clear risk and cost criteria with which the total debt portfolio can be assessed, which can be used as a basis to steer and with which results can be clearly reported in respect of these criteria. As described in chapter 3, in response to these recommendations, two risk criteria were introduced with the interest rate risk framework 2016-2019: the average maturity of the portfolio (debt and swaps) and the refixing amount (RA). This paragraph discusses the risk indicators introduced and it is examined whether these are sufficiently Specific, Measurable, Acceptable, Realistic and Time-bound (SMART).

#### 4.2.1.1 Average maturity

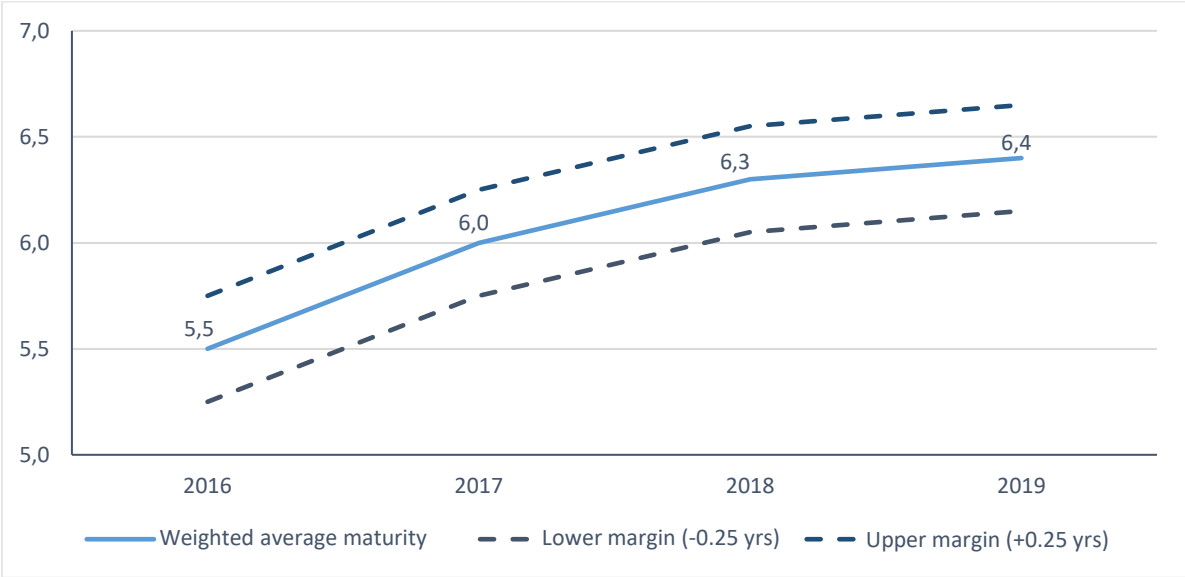
Paragraph 3.3 explains that the average maturity of the portfolio influences the interest rate risk that is taken in the long-term in the budget. The theory is that with a higher average maturity, an upward interest rate shock over time leads more gradually to higher interest expenditures in the budget. This criterion is used more often by debt managers to determine the interest rate risk of a portfolio in the long-term (Acceptable).

The years prior to 2015 were marked by an increase in debt and a decrease in the interest rates to historically low levels. By extending the maturity of the portfolio, relatively low interest expenditures could be locked-in for long periods of time. For the interest rate risk framework 2016-2019, the optimum maturity of the portfolio was calculated as an average of 6.4 years, whereas this was still 5.3 years at the end of 2015 (Specific/Measurable).

A portfolio with an average maturity of 10 years has a higher interest rate, but a lower interest rate risk than a portfolio with an average maturity of 5 years. The interest rate risk is smaller because it will take longer before an increase in interest rates has had an impact. This contributes to budgetary stability. The interest rate risk framework 2016-2019 establishes a path to pursue for extending the average maturity (see Figure 9 below and Table 7 in chapter 3). At the beginning of 2016, the target portfolio had a maturity of 5.3 years and this rises to 6.4 years at the end of 2019 (Time-bound).

In practice, unexpected deviations in the maturity may occur due to fluctuations in the debt issuance as a result of changes in the budget and in market circumstances. As a result, in common practice the maturity cannot be steered exactly in all cases. For this reason, both an upper and lower margin of 0.25 years is maintained for the maturity (Realistic).

Figure 9: Average maturity targets.



Source: The Dutch State Treasury Agency (DSTA), Ministry of Finance

4.2.1.2 The refixing amount

Paragraph 3.3 explained the refixing amount (RA), which is used to manage short-term risks. The RA is based on the amount for which the interest rate must again be fixed in the next twelve months. This amount consists of the debt that must be refinanced within a year and the net amount of current interest rate swaps on which the interest rate must be re-fixed.

The refixing amount is influenced by four factors: the cash balance (setbacks are financed by means of short-term debt so the RA increases), the issuance of bonds (these, by definition, are longer than one year, so an issuance ensures a decrease in the RA), the buy backs of bonds (because buy backs are funded on the money market, the RA increases if bonds with a maturity between 12 and 24 months are bought back), and the early termination of receiver swaps (these enable a decrease in the amount on which a variable interest rate must be paid and for a reduction in the collateral; both of which ensure a decrease in the RA).

The refixing amount is measured as a percentage of the total debt. The average refixing amount is maximized at a value that is realistic in view of the desired level and composition of the debt (Realistic) and which fits in with an intended maturity of the debt portfolio of 6.4 years. At the time of drawing up the interest rate risk framework in 2015, each year at least two capital market loans of €15 billion had to be refinanced of the then prevailing debt level. The money market had to be refinanced annually too, aiming for a level of approximately €25 billion. Together, it amounted to approximately 15% of the national debt. As a year progresses, cash deficits may possibly have to be added. In 2015, a cash deficit of around 3% of the national debt was assumed (about 1.5% of GDP) (Specific). A maximum value of the refixing amount of 18% of the national debt (15% refinancing + 3% cash deficits) was considered to be realistic at the time.

In 2015, it was therefore determined that the average annual refixing amount (Time-bound) may not be higher than 18% of the national debt. The refixing amount over a whole year is calculated by taking the average of the values at the end of each month (Measurable). As the refixing amount is expressed as a percentage of the national debt, the criterion – and its maximum value – depends on the composition and level of the debt portfolio. This means that in the event of a different composition and level of debt, the maximum value is subject to change. Given a fixed target level for the money

market, a decrease in the national debt means an upward pressure on the RA (denominator effect). A lower debt and the same principles of the funding policy should therefore have a correspondingly higher maximum value of the RA. As a result, it is possible that the absolute amount that must be refinanced each year does not change, while the RA (as a percentage of the national debt) increases. The fact that the RA is defined as a percentage of the national debt, is to the detriment of the uniformity of the risk indicator.

It is concluded that the risk criteria introduced in the interest rate risk framework of 2016-2019, are sufficiently SMART and that the risk indicator RA could gain in uniformity. This could be achieved by not relating the RA to the national debt, but, for example, to the GDP, making it more in line with criteria such as the general government balance and general government debt, which are likewise expressed as a percentage of GDP. Another option is to express the RA as an absolute amount and for example, to index it to the GDP or the size of the budget.

#### 4.2.2 International comparison

Other Eurozone countries also use risk indicators in financing national debt. Some of these indicators look similar to risk indicators like RA and average maturity as maintained in the Netherlands, but they are not always identical. Some countries use duration<sup>43</sup> as the key risk indicator, or have a benchmark portfolio (with a certain maturity) that is being pursued. This paragraph discusses general trends seen in other countries of the two risk indicators which the Netherlands maintains. As there are sometimes major differences between countries in relation to, for example, the rating, debt level, interest rate developments and economic and budgetary prospects, it is difficult to draw conclusions based on the findings. Every country chooses what it finds appropriate for its own situation. This paragraph is therefore only meant to give you an idea of how the Netherlands performs in comparison to other countries.

##### *Maturity*

Figure 10 shows the course of the (unweighted) average maturity of the debt portfolio of nine Eurozone countries<sup>44</sup> plus the Netherlands. It shows that, on average, the maturity in these countries has increased by 0.49 years, to about 7.3 years in early 2019. The average maturity of the Netherlands portfolio increased in that period by 1.18 years. It can also be seen that the average maturity in the Netherlands in 2015, was about 1.5 years lower than the average of these nine countries and that the maturities have moved towards each other. At the beginning of 2019, two countries had a lower average maturity than the Netherlands, the rest had a maturity that was somewhat longer. This shows that both the level and trend of the average maturity of the Netherlands portfolio are in line with other Eurozone countries.

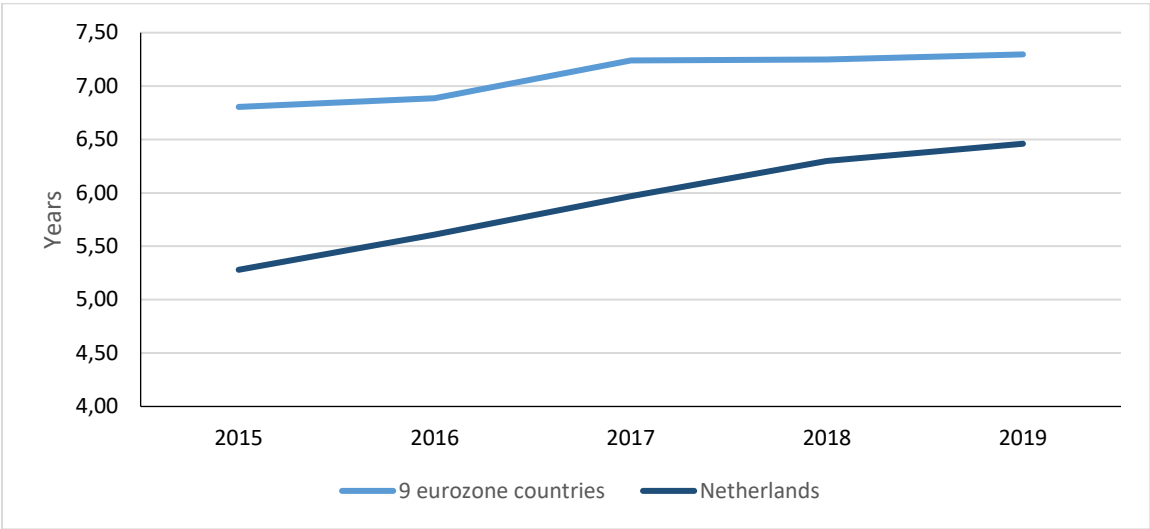
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<sup>43</sup> Duration is a criterion of interest rate sensitivity of bonds, which is derived from the maturity. The longer the remaining maturity, the stronger bond prices respond to an interest rate change and the higher the duration. For instance, a duration of five means that in the event of a 1% rise in the interest rate, the price of the bond will drop by 5% and vice versa.

<sup>44</sup> These nine countries were chosen because of their size and/or because they are best comparable with the Netherlands in terms of the size of the economy or debt level. The countries include: Belgium, Germany, Finland, France, Ireland, Italy, Austria, Portugal and Spain.



Figure 10: Unweighted average maturity of 9 eurozone countries plus the Netherlands (average time to refixing)<sup>1</sup>.

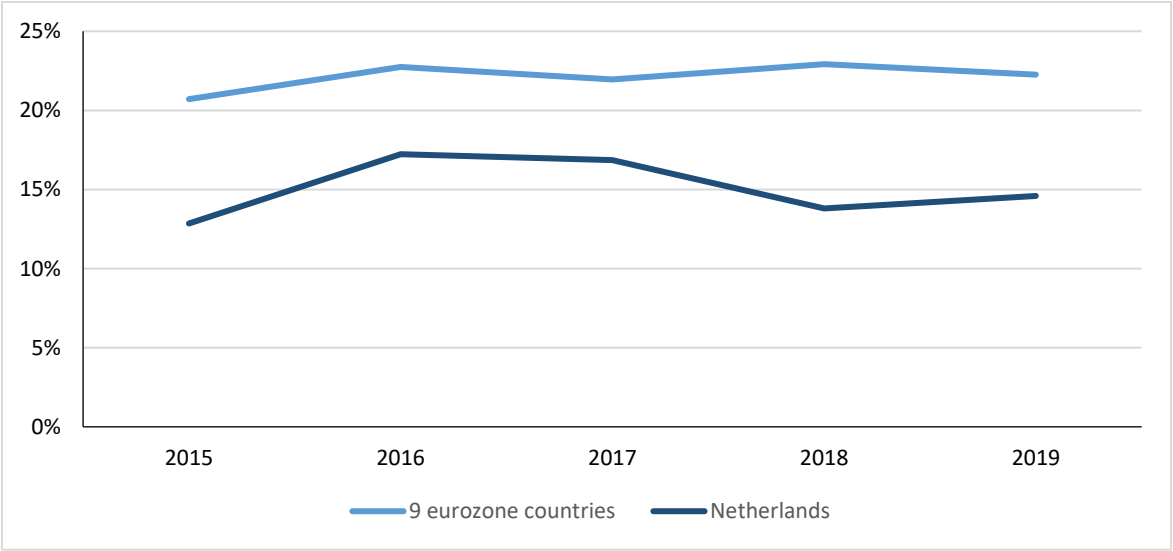


Source: The Dutch State Treasury Agency (DSTA), Ministry of Finance <sup>1</sup>2019 is up to 31 March.

**Refixing amount**

The average refixing amount of the nine Eurozone countries has remained fairly stable over the past five years and fluctuated between 21% and 23%. The Dutch RA for the period 2016-2019 amounts to a maximum of 18% and remained below this ceiling over the whole period. One other country had a lower RA than the Netherlands, 8 countries score higher than the Netherlands. Three other countries had an RA below the ceiling of 18% that is maintained by the Netherlands. The Netherlands' RA is therefore in the vicinity, but below the average of the nine chosen Euro countries.

Figure 11: Average refixing amount of 9 eurozone countries plus the Netherlands (refixing risk 1 yr)<sup>1</sup>.



Source: The Dutch State Treasury Agency (DSTA), Ministry of Finance <sup>1</sup>2019 is up to 31 March.

It is difficult to draw a conclusion based on the above international comparison, especially since situations differ per country. Differences in preferred risks in some countries could also lead to other choices. The fact that the Netherlands has a shorter average maturity than the other countries, may mean that the Netherlands has financed its debt cheaper (after all, shorter maturity generally means



lower interest costs), but has also run more risk. Alternatively, a lower RA could indicate that the Netherlands was more risk-averse in the short-term than the average in the Euro countries. Concurrently, it can be concluded that the risk indicators maintained by Netherlands are reasonable in accordance with the values that other European countries maintain.

#### 4.2.3 Interim conclusion

To implement the recommendation in the 2015 review policy of establishing clear risk criteria, in the period 2016-2019 the DSTA based its interest rate risk framework on two indicators: the average maturity of the portfolio, which says something about interest rate risks in the long term, and the refixing amount (*RA*), which is a criterion for the interest rate risks in the short term. When 'clear' is replaced by SMART (Specific, Measurable, Acceptable, Realistic and Time-bound), it shows that the indicator average maturity as maintained by the DSTA, is SMART: the average maturity is an internationally accepted criterion to monitor and manage the interest rate risks in the long term that are also used by other debt managers (Acceptable). The average maturity of 6.4 years at the end of 2019 which reflects the DSTA's preferred trade-off between costs and risk, is based on quantitative calculations (Specific/Measurable). For this purpose, since 2015 when it was still 5.3 years, the DSTA has established a path to pursue to gradually extend to 6.4 (Time-bound) by a margin of +/- 0.25 years (Realistic) per year.

The RA is also SMART, but could gain in uniformity. The RA is a percentage of the total debt and the 18% represents a value that was considered realistic in view of the desired level and composition of the debt (Realistic). At the end of 2015, the RA was calculated based on the then current debt level, desired volumes of the capital market and the money market, supplemented with possible cash deficits (Specific). The average refixing amount of maximum 18% applies per annum and is calculated every year by taking the average of the values at the end of each month (Time-bound and Measurable).

As the RA is expressed as a percentage of the national debt, the extent of the RA depends on the composition and level of the debt portfolio. The RA increases automatically whenever the money market remains the same while the national debt decreases (denominator effect). In other words, even if in absolute terms, the amount that must be refinanced annually remains the same, the RA (as a percentage of national debt) can increase. The foregoing does not benefit the uniformity of the RA, and it must be considered to investigate other alternatives, for example, an RA related to the level of GDP or an RA based on an absolute amount.

Also, a number of other Eurozone countries<sup>45</sup> maintain (quantitative) risk indicators, which are sometimes comparable to the average maturity and RA that the DSTA maintains. Generally, the average maturity of debt portfolios in those countries can be expected to increase in 2016-2019, as was the case in the Netherlands, where the maturity maintained by the Netherlands was about 1.5 years lower than the average of the other countries. The Netherlands' RA is close, but lies just below the values in the other countries. Although the values maintained by the Netherlands are reasonably in accordance with the values maintained by other Eurozone countries, it is difficult to draw a conclusion from this comparison, because every country has its own specific economic context and preferred risk which may lead to different choices.

### 4.3 Swap strategy pursued

Chapters 2 and 3 explained the DSTA's use of interest rate swaps. In the period 2016-2019 swaps were terminated early to achieve the maturity and RA objectives. Partly by terminating receiver swaps early, the maturity of the portfolio was expected to extend to 6.4 years at the end of 2019 (+/- a margin of

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<sup>45</sup> Belgium, Germany, Finland, France, Ireland, Italy, Austria, Portugal and Spain.

uncertainty of 0.25 years) and the average RA was maintained at below 18% per annum on a monthly basis.

One of the recommendations in the previous policy review was to reduce dependency of swaps. Whether this recommendation has been complied with, can be viewed in two ways:

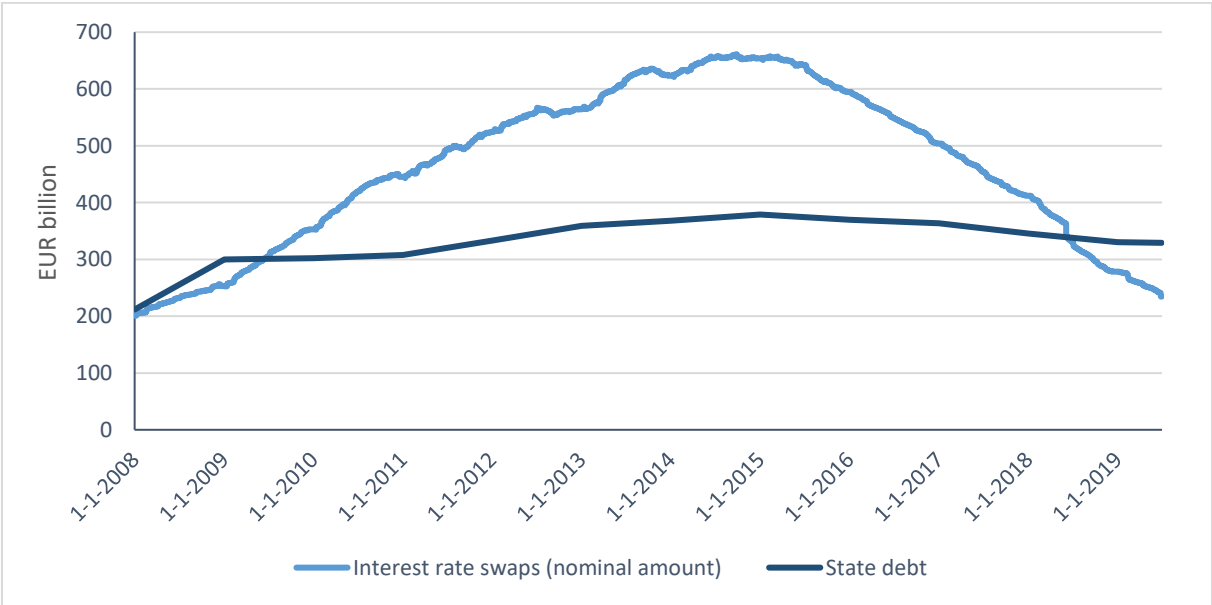
1. Has the size of the swap portfolio decreased, allowing for less risk to be run in future as a result of disadvantages associated with a large-scale swap portfolio? This is an effectiveness issue.
2. Was it possible to achieve the objective without the use of swaps or their early termination, for example, through adaptations to the issuance policy or use of buy backs? This is an efficiency issue. Here, it would be analysed what the achieved maturity and RA would have been if no swaps were terminated early and the issuance strategy was not adapted.

Both aspects are examined in this chapter. At the same time, in the context of efficiency, it will be examined whether the objectives could also have been achieved with another swap strategy, for example, by entering into new payer swaps instead of early termination of receiver swaps.

4.3.1 Development of swap portfolio size

Figure 12 shows that the nominal size of the interest rate swap portfolio increased from about the size of the national debt at the beginning of 2008 to about twice the size of the national debt in 2015 (more than €650 billion at the peak). This was the consequence of the interest rate risk policy in that period, in which the interest rate on new debt issuances was converted via swaps to a preferred 7-year interest rate. In practice this meant that two swaps were necessary for every issuance: 1) a receiver swap, on which fixed interest is received and variable interest is paid, to convert the fixed interest of the particular issuance to a variable interest, and 2) a payer swap, on which fixed interest is paid and a variable interest is received, to convert the variable interest to the preferred 7-year interest rate.<sup>46</sup> This enabled the DSTA to achieve an average maturity of 3.5 years for the portfolio.

Figure 128: Size of the interest rate swap and debt portfolio of the Dutch State



Source: The Dutch State Treasury Agency (DSTA), Ministry of Finance

<sup>46</sup> See also the previous policy review Risk management of the national debt 2012-2015: <https://english.dsta.nl/documents/publication/2015/06/19/risk-management-of-the-national-debt-2015>

The 2015 policy review contained the recommendation to reduce dependency on swaps. It is for that reason – and necessitated by the desire to lock in historically low interest rates in the long term and thus to create more budgetary certainty – that the DSTA has included a strategy in the policy framework of 2016-2019, focused on extending the maturity and reducing dependency on swaps. Firstly, because of the historically low interest rates, the DSTA had already discontinued the standard ‘back swapping’ of long-term loans to the 7-year interest rates since 2012. Secondly, during the period 2016-2019 no new long-term swaps have been entered into. Thirdly, in this period, existing receiver swaps were terminated early on a large scale to further extend the maturity<sup>47</sup>. This focused on extending the average maturity of 5.0 years at the beginning of 2016 to a desired 6.4 years at the end of 2019 (see also Table 6). Also, discontinuing receiver swaps was intended to maintain the RA below a ceiling of 18% and to limit the short-term interest rate risk.<sup>48</sup> Both the maturity and RA objectives were achieved with this swap strategy for the years 2016, 2017 and 2018 and are expected for 2019 too.

As a result of policy in recent years and through the normal course of the swap portfolio, the size of the swap portfolio decreased rapidly. Figure 12 shows that the swap portfolio currently lies below the level of the amount of national debt. The total nominal size of the swap portfolio was €234 billion in mid-2019, while the national debt amounted to €329 billion at that time. In comparison to the peak in 2014 (around €660 billion) the swap portfolio more than halved. The DSTA is therefore visibly less exposed to swaps than prior to the start of the policy framework, so it can be concluded that it has become less dependent on swaps.

As a result, risks arising from the swap portfolio have decreased. A subtle distinction in this regard is that the amount on which risk is run, on balance, is much smaller than the total nominal size of the swap portfolio, because payer and receiver swaps partly cancel each other out. A payer swap is accompanied by a receipt of a variable interest rate, a receiver swap with payment of the same variable interest rate. The total gross amount of the swap portfolio of €234 billion in mid-2019, consisted of €131 billion in payer swaps and €104 billion in receiver swaps. The net swap position was therefore a payer position of ‘only’ €27 billion. The variable interest rate is received (and a fixed interest is paid) on this net payer position. The net swap position decreased during the policy framework, from €46 billion at the beginning of 2016 to €27 billion by mid-2019, so that it can also be concluded from this that the risks arising from the swap portfolio reduced. The reduction arose from the fact that more payer swaps than receiver swaps matured and only receiver swaps were terminated.

One of the risks arising from the swap portfolio is credit risk, i.e. the risk that the counterparty fails to fulfil his payment obligations on the swaps. As indicated in chapter 3, this risk is already mitigated by the DSTA by merely entering into swaps with the most creditworthy PDs and having these PDs deposit collateral when swaps have a positive market value for the State. The credit risk, however, is reduced further because the swap portfolio has been scaled down in its entirety, and because the net position of the swap portfolio has been reduced.

Another risk arising from the swap portfolio is the market risk that is run on the swaps. This is the natural result of interest rate fluctuations resulting in changes in the value of swaps and thus in the amount of collateral that the DSTA manages. Changes in the collateral have an influence on the funding need. When the market value of a swap position with a counterparty becomes more positive, as viewed from the perspective of the State, the counterparty deposits additional collateral. As this

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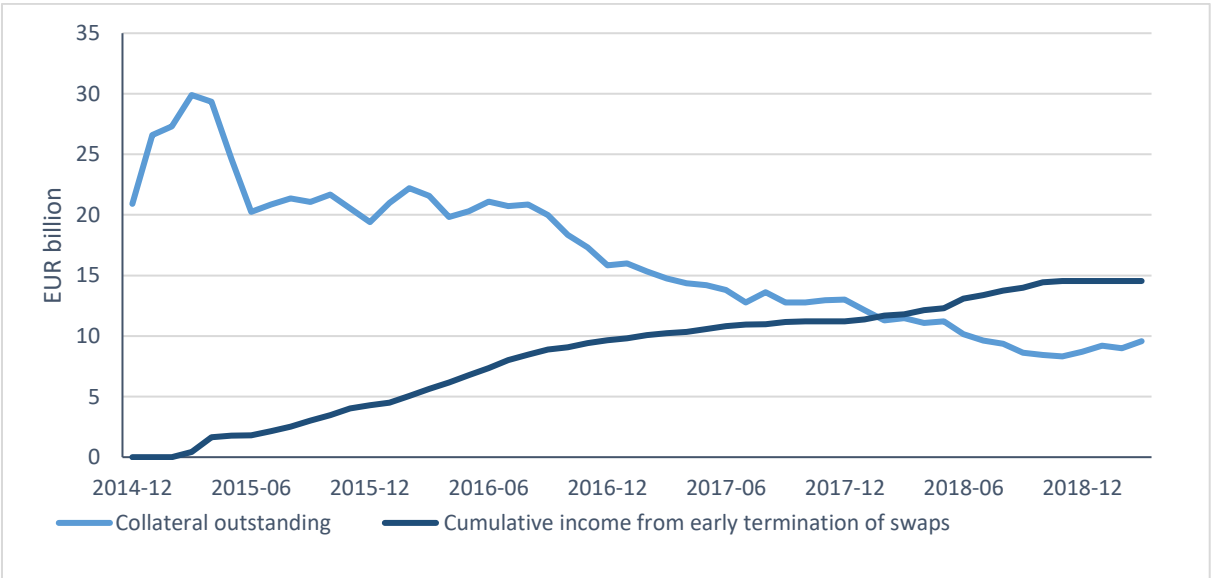
<sup>47</sup> The early termination of receiver swaps resulted in decreased payments based on a variable (short-term) interest rate and decreased revenues based on a fixed (long-term) interest rate; this resulted in an extension of the maturity of the portfolio (debt plus swaps).

<sup>48</sup> The early termination of receiver swaps results in lower variable (short-term) interest payments. This resulted in a decreased proportion of the debt in relation to the total debt (the RA) for which the interest rate had to be refixed within twelve months.

collateral is used as short-term financing of national debt, the funding need and hence the call on the market reduces. Conversely, when the market value of a swap position with a counterparty becomes less positive, as viewed from the perspective of the State, collateral is released (it is paid back) and the funding need increases (i.e. the State must raise funds to pay back the collateral). A smaller amount of collateral will, in principle, ensure smaller fluctuations in the funding need.

The value of the swap is nothing more than the net cash value of the expected future interest payments and interest revenues. For receiver swaps that were terminated it concerned the positive market value, because of the relatively high fixed interest rate received at that time in respect of the current market interest rate. The early termination of receiver swaps with a positive market value has resulted in a reduction of the collateral, without having had an influence on the funding need. In fact, the DSTA has reduced the balance sheet by realising the positive market value of the swaps (assets) and thus releasing the collateral (liabilities). Instead of having net interest revenues in future years, its present cash value was realised at once. These revenues are equal to the collateral that has been released and have reduced the national debt by the same amount (i.e. the collateral is no longer part of the national debt).

Figure 13: Development of collateral outstanding vs. cumulative income from early termination of swaps<sup>1</sup>.



Source: The Dutch State Treasury Agency (DSTA), Ministry of Finance <sup>1</sup>Data until the end of March 2019.

Figure 13 shows the relationship between the collateral being managed and the cumulative income from the early termination of receiver swaps from early 2015 to early 2019. It shows that the collateral at the beginning of 2015 amounted to more than €20 billion and then (under the influence of sharply declining interest rates) rose to approximately €30 billion in March 2015 and subsequently dropped to €9.5 billion in March 2019. The substantial decrease in the collateral can largely be explained by the termination of receiver swaps with a positive market value. This has, cumulatively from the beginning of 2015 until the end of March 2019 realised almost €15 billion in income, which has reduced the collateral (and the national debt) by the same amount.

During the past policy period, the interest rate – as described in paragraph 2.5 – has remained fairly stable and has even decreased slightly. A lower interest rate specifically leads to more collateral being managed because this increases the market value of receiver swaps. Although a falling interest rate reduces the market value of payer swaps, the receiver swaps owned by the DSTA generally have a

longer maturity than the payer swaps and are therefore more sensitive to market developments (thereby contributing more to the market value of the total swap portfolio). This explains the increase in the collateral to €30 billion in March 2015. It also explains the fact that the collateral at a level of €20 billion in early 2015 did not reduce to €5 billion at the end of March 2019 – in view of the income of €15 billion from termination of receiver swaps – but ‘only’ to €10 billion.

It can therefore be concluded that by terminating receiver swaps early the collateral being managed has reduced. The effect of fluctuations in the value of collateral on the short-term funding need has therefore also decreased. As a result of the smaller swap portfolio and its lower net position, the DSTA is also less exposed to market risk on swaps and has therefore become less sensitive to future interest rate fluctuations. From both results it can be concluded that the DSTA, in accordance with the objective, has become less dependent on swaps.

Moreover, it should be noted that the reduction in the market risk as a result of the terminations of receiver swaps, has reduced both the ‘downside’ that the swap portfolio could be worth less and the ‘upside’ that the value could rise further. An early termination of a swap is done based on the current interest rates, just as debt issuance is also done at the prevailing interest rates. Termination of a swap at a different time could mean a higher or lower market value, just as an earlier or later placing of debt could bring about higher or lower interest costs.

This means the question whether the early termination of receiver swaps (and thus the reduction in market risk) has been beneficial in the past policy period compared to the non-termination of receiver swaps, has not been investigated. Such understanding has no added value for creating future policies and correlates with development of the interest rate (which is very difficult to predict). The policy, by contrast, is aimed at achieving the objectives of risk management (maturity of 6.4 at the end of 2019 and an RA of up to 18% of the national debt). The early termination of swaps has been an important instrument to achieve those objectives. By spreading out early terminations in time, just as debt issuances, it ensures that measured over a longer period, the ‘average’ market value is received or the ‘average’ interest rate is paid. From a market risk point of view, this is the preferred strategy. The DSTA has achieved this in the past policy period by periodically establishing a schedule with quantitative objectives for the nominal size of receiver swaps to be terminated and their maturity. Schedules were drawn up for periods of two weeks each time; periodically (usually monthly or quarterly) it was checked whether the schedule needed adjustment to achieve the interest rate risk objectives. Within these schedules, the front office has the possibility to align both the timing of early terminations and the exact maturity as closely as possible to the market circumstances. In combination with the policy that states that early terminations should always be concluded in competition (i.e. a quote is always requested from at least two counterparties), this ensures that the most efficient implementation imaginable is pursued. The formulation of an explicit benchmark to which the implementation can be measured, would make it possible also to actually measure the efficiency, and could simultaneously form an incentive to further improve efficiency.

#### 4.3.2 Managing interest rate risk objectives without swaps

The question is whether the maturity and RA objectives in the period 2016-2019 can also be achieved without any use of swaps or their early termination. Even though no new swaps have been entered into in the capital market during the period 2016-2019, the DSTA was still dependent on the existing swap portfolio to achieve the interest rate risk objectives. After all, by terminating receiver swaps, it could gradually be steered towards an average maturity of 6.4 years at the end of 2019, and the RA could, on average, be maintained below the 18% on an annual basis. If based on only debt issuances, this would have been very difficult or impossible (see also Table 8 in paragraph 3.3.2).

In the first place, this would have meant that, to be able to achieve the objective of extending the average maturity, DSLs with a longer maturity would have had to be issued in the period 2016-2019. In this way, the 5-year and 7-year DSLs which were issued should have been given a much longer maturity, for example 30 years. This would have explicitly linked the funding policy to the interest rate risk framework. On the flip side of such a link, the debt issuances that would be required to achieve the objectives of the interest rate risk framework, would not necessarily be the debt issuances which the market would have a need for at that time. In addition, making the funding policy dependent on certain interest rate risk objectives – in this case in respect of RA and average maturity – would automatically be to the detriment of the consistency of the funding policy. Then the DSTA can commit itself to a much lesser degree to a predictable issuance pattern, such as a new 10-year loan every year or a new long-term loan (longer than 10 years) once every four to five years. Pursuing a consistent funding policy is precisely in accordance with guidelines for debt management of the IMF and the World Bank, and also one of the SEO recommendations (see also chapter 5). It should contribute to a lower risk premium and hence a lower interest rate for the State. By using swaps, funding policy and interest rate risk considerations can, in principle, be unlinked.

A less common method to manage the maturity without the use of swaps, is the buy backs of outstanding loans (see also paragraph 2.1)<sup>49</sup>. Loans with a relatively short residual maturity could, for example, be bought back by issuing loans with a longer maturity, to extend the average maturity of the portfolio in accordance with the objective. A spin-off is that this also contributes to liquidity in the new capital market loans to be issued (however, at the expense of liquidity in the loans that have been bought back). The question is to what extent this can be done on a significant scale without making price concessions, particularly in a climate in which DNB also purchased debt. Further, buying back debt with relatively higher coupon rates from the past, means a direct increase in the national debt; after all, buy back prices will be above par, given the relatively low market interest rates. Although this doesn't change the fact that interest expenditures in future years will be lower, this cost must be realised at once. Furthermore, extension via buy backs – just like regular debt issuances – implicates an explicit link between issuances and risk management; the question is, to what extent is that possible without compromising too much on consistency of the funding policy and the commitment to safeguard the liquidity of Dutch government bonds.

Finally, there is still the possibility to reduce financing in the money market and instead of that, to issue capital market loans to extend the average maturity of the national debt. This, however, ignores the fact that the money market serves as a buffer to compensate for fluctuations in the cash balance and thus – at least to some extent – must be resistant to the objectives of the interest rate risk framework.

Insofar as it was possible to achieve extension of the maturity of the portfolio in an efficient and responsible manner without the use of swaps, the question still remains whether the RA objective of a maximum of 18% could have been achieved without using swaps. A quick example calculation makes it clear that this was not feasible without substantially reducing the money market. The size of the money market<sup>50</sup>, including collateral, as well as the capital market loans that repay within one year, fall within the RA. This amount is measured against the total size of the national debt. The policy framework 2016-2019 showed an RA of a maximum of 18% (the short-term risk ceiling). However, without adjustment, the RA would already have been 21% at the start of the 2016 policy framework, given the size of the money market (€25 billion<sup>51</sup>), the collateral being managed at that time at approximately €20 billion, and capital market redemptions that had to take place within a year of

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<sup>49</sup> At present, loans are only bought back for cash management reasons, for example, to spend surplus funds or to prepare in advance for a significant redemption that is going to take place in time.

<sup>50</sup> The swap portfolio has not been included here.

<sup>51</sup> The size of the money market of €25 billion is pursued to keep the money market sufficiently liquid.

approximately €30 billion, i.e. a total of approximately €75 billion. The national debt amounted to approximately €350 billion, so the RA would have been about 21% at the beginning of 2016 (€75 billion/€350 billion). A significant decrease in debt financing in the money market would have been necessary to attain and stay below the ceiling of 18%. This would not have been compatible with an effective cash management in which a sufficiently liquid money market is necessary to absorb unexpected windfalls and setbacks in the funding need. In short, other control mechanisms are necessary to achieve the RA objective.

As is the case for adjustment of the average maturity, buying back outstanding loans could also have been considered for adjustment of the RA. Capital market loans due to expire in the short-term and therefore falling within the RA,<sup>52</sup> could be bought back, funded by issuing long-term capital market loans. For this purpose too, it would create an explicit link between funding policy and risk management, and that it is not obvious that this would be possible on a large scale without compromising on the consistency of the funding policy. A more obvious method with fewer restrictions, as mentioned before, is the use of swaps.

#### 4.3.3 Managing interest rate risk objectives with an alternative swap strategy

A theoretically obvious alternative for the termination of existing receiver swaps, is to enter into new payer swaps. Both have approximately the same effect on the risk criteria on which policy is steered (an increase in the average maturity and a decrease in the RA). The use of new payer swaps instead of the termination of receiver swaps was analysed, in the interim, by the DSTA (October 2017). Based on the analysis, eventually a preference is given to the early termination of receiver swaps. The most important reasons for this was that counterparties were more interested in the early termination of receiver swaps than entering into new payer swaps; it was expected that this would mean somewhat lower transaction costs and, therefore, a better price. In addition, in view of the desire to become less dependent on swaps, there is an advantage that with the early termination of receiver swaps, the extent of the swap portfolio could be scaled down. Similarly, through early terminations, high market values (as a result of low interest rates) could be realised and the national debt could be reduced. Besides, early terminations were a way to reduce the risk on several counterparties.

Finally, it should be noted that the early termination of receiver swaps has had a slightly more reducing effect on the RA due to the release of collateral, and has had a slightly increasing effect on the average maturity than would have been the case if only payer swaps had been used. The reason for this is that collateral pays a short-term interest rate (based on the overnight interest rate) and hence collateral is considered to be money market financing. When collateral is released, money market financing with payments based on short-term interest rates fall away, decreasing the RA even further and the maturity increases further. It can therefore be stated that on entering into new payer swaps, a larger nominal amount of swaps would be required to achieve the same as with the early termination of receiver swaps. On this basis, and based on the considerations set out above, it can be stated with caution that the early termination of receiver swaps has been at least as efficient as entering into new payer swaps would have been and, therefore, that efficient policy has been pursued.

#### 4.3.4 Interim conclusion

The 2015 policy review contained the recommendation to reduce dependency on swaps. The DSTA has taken over this recommendation in its policy framework 2016-2019 in combination with extending the maturity in view of historically low interest rates. In 2015, the swap portfolio was approximately €650 billion in nominal terms, being about twice as large as the national debt. This level has decreased in the recent past, on the one hand through the normal course of the swap portfolio, and on the other

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<sup>52</sup> Capital market loans will 'fall within the RA' if their residual maturity is shorter than twelve months.



hand, through active policy of the DSTA: loans were no longer routinely 'swapped back' to the 7-year interest rate, in the period 2016-2019 no new swaps were entered into in the capital market and a major portion of the receiver swaps were terminated early. This has not only contributed to achieving the targets for average maturity and RA which were formulated in the policy framework 2016-2019, but the size of the swap portfolio has also been drastically reduced to approximately €279 billion at the beginning of 2019. On balance (in this case the payer swaps minus receiver swaps), there is a decrease of €46 billion at the beginning of 2016 to €29 billion net worth of payer swaps at the beginning of 2019. The swap portfolio's credit risk has therefore also reduced.

An additional consequence of the reduced swap portfolio is that the collateral that counterparties are required to deposit at the DSTA, if a swap has a positive market value for the DSTA, also reduces as well as the risk as a result of fluctuations in the size of that collateral. Collateral deposited in cash, is considered short-term financing and thus reduces the funding need in the money market. So, fewer fluctuations in collateral also lead to fewer fluctuations in the funding need (and thus better predictability).

Although no new swaps were entered into in the capital market in 2016-2019, in that period the DSTA used the termination of existing receiver swaps to achieve the RA and maturity objectives. In that sense, the DSTA was still dependent on swaps, albeit on their termination. Alternative strategies to achieve the RA and maturity objectives without early termination of swaps, were less appropriate, however, because either the consistency would violate the funding policy (issuing far more long-term loans than planned), or would be relatively expensive (buying back loans at relatively high prices, and issuing long-term loans). The alternative to reduce the money market (short-term financing) in respect of the total debt was unattractive, because the money market must be sufficient in size to be able to fulfil its function as a buffer and to guarantee liquidity in the money market.

## 4.4 Interest expenditures and budgetary rules

### 4.4.1 Interest expenses and the budgetary rules

The manner in which the general government balance is calculated, is laid down in the European System of Accounts (ESA 2010) for national accounts. Since the introduction of the ESA 2010, flows of interest for swaps are no longer relevant for the general government balance, because these are considered to be financial transactions. So, swaps can only be used for management of the interest rate risk on the national debt, but not to manage the general government balance. Interest expenditures on the loans portfolio does form part of the general government balance.

Although interest expenditures on the national debt are relevant for the general government balance, in the cabinet period 2012-2017 (Rutte II) they were placed outside the Netherlands expenditure framework<sup>53</sup>. As continuously declining interest rates prevailed in this period the windfalls succeeded each other. These windfalls could not be used to compensate for setbacks elsewhere in the budget and were automatically used to reduce the national debt. In the Initial Policy Memorandum<sup>54</sup> of the Rutte III cabinet, partly due to advice in the fifteenth report of the Study Group On The Budget Margin<sup>55</sup>, it was agreed to place the interest expenditures on the national debt within the expenditure framework again, as from 2018. As a result, setbacks must be compensated elsewhere in the budget. Any setbacks do not specifically need to be compensated in the Finance budget, compensation must be found government-wide.

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<sup>53</sup> The Netherlands' national budgetary framework has fixed annual frameworks for expenditure. In any given year, the total expenditure of the National Government must remain within these frameworks.

<sup>54</sup> Dutch House of Representatives, Parliamentary Papers 2017-2018, 34775 no. 54.

<sup>55</sup> Dutch House of Representatives, Parliamentary Papers 2015-2016, 34300 no. 74, appendix 776485.



*\*\*Not translated:*

*Paragraph 4.4.2. The '20% savings alternative', including tables 11-13 \*\**

#### 4.5 Interim evaluation May 2017

The previous policy review includes a recommendation to evaluate the new policy in the interim. The 2016-2019 policy framework includes evaluating the framework in the interim should changing market circumstances give rise to that. The market circumstances have not changed significantly over the period of the policy framework. Historically, the interest rates have remained exceptionally low and relatively stable. This gave no cause to adjust the chosen strategy, in particular the strategy to extend the average maturity of the debt portfolio.

However, in the recent past the size of the national debt has reduced as a result of the recovering economy and sound public finances. In May 2017, it was evaluated whether the lower national debt would lead to new policy insights. Interest costs and risks will reduce in the event of a declining national debt (and constant interest rates). If the preferred risk remains unchanged – i.e. the aim is to keep the risk at the level at the start of the policy period – by reducing the maturity, a cost reduction can be achieved at the same risk. Or conversely: if the costs can remain at the same level as at the start of the policy period, it can be opted to extend the average maturity, to thus run less risk at the same costs. The policy framework analysis was redone based on a lower national debt (€340 billion as opposed to €370 billion before). The new analysis showed an optimum maturity of 6.6 years. This is slightly higher than the maturity objective of 6.4 years that was established at the time for the policy framework. At the same time, it falls within the margin of uncertainty of +/- 0.25 years. The analysis has not led to substantial new insights which justify a change in the policy framework, but it has shown that, if so desired, a choice could be made to steer somewhat more towards the top end of the previously formulated range for the maturity to be pursued.

Despite the fact that the interim analysis has not led to any significant other insights in this case, it is not excluded that this may be so in the future. It's for this reason that it could be wise, on establishing the implementation of a new policy framework, to ensure that it will be evaluated in the interim. In addition, it raises the question to what extent the possibility of changing circumstances should be taken into account prior to the start of a new policy framework. Although not everything can be anticipated, an analysis could already have been done on what effects a decreasing or increasing national debt would have on the results. Also, as recommended by SEO, future interest rates in accordance with market expectations or forecasts by the CPB Netherlands Bureau for Economic Policy Analysis could be taken into account. By including such aspects as far as possible ex ante in the analyses, a more realistic assessment can be made of the costs and risks. This reduces the risk that an interim evaluation gives rise to significantly adjust the policy.

#### 4.6 Conclusion: assessment of effectiveness and efficiency

The objective of Article 11 is: "Debt financing at the lowest possible interest cost under acceptable risk to the budget". Efficiency (at the lowest possible interest cost) is thus part of the objective of Article 11, as described in paragraph 1.3.

For an assessment of the effectiveness and efficiency, SEO was asked to conduct research into both the interest rate risk framework and the funding policy. This paragraph presents the SEO findings.

##### *Interest rate risk framework*

SEO conducted qualitative research into the principles maintained by the DSTA in the ex-ante analysis in 2015 for establishing the optimum debt portfolio for the period 2016-2019. SEO concludes that a number of these principles can be restrictive in some cases. For example, in its analysis, the DSTA made

use of a time horizon of twelve years (three cabinet periods) and for the calculation of interest costs, based the calculation on the average yield curve<sup>56</sup> over the third quarter of 2015. In this way it implicitly showed that each increase in interest, even if it was expected by markets and was already priced in, was considered as 'risk'. As the analysis assumed the prevailing interest rates at that time and not the expected interest rates, this then led to an overestimation of the risk according to SEO, because an *expected* and priced-in increase of the interest rate by the market must not be considered as being a risk. In addition, in the analysis the DSTA kept no account of a reduction in the interest rate, because this was not seen as a risk. However, in the event of a reduction in the interest rate the same risk profile can be obtained at a lower cost. By only taking rising interest rates into account there is a relatively stronger tendency to extend the maturity to lock in these low interest rates for a longer period of time. By not taking falling interest rates into account, there is a risk that the maturity is extended too far and so too much is paid for budgetary certainty. Furthermore, in the analysis, the DSTA had not attributed any likelihoods to the various interest rate scenarios. This leaves the question open as to how great the probability was of interest scenarios which were taken into account. The DSTA's interest rate scenarios may also be regarded as pessimistic, according to SEO. The DSTA's interest rate scenarios, according to SEO, lead to an overestimation of future funding costs and a risk-averse attitude.

SEO also states that the results of the ex-ante analysis by the DSTA are also influenced by the choice of the time horizon. In the analyses, a longer time horizon of the model automatically leads to a longer maturity of the portfolio, because there would be benefits of the low fixed interest rates for a longer period. In addition, only portfolios were examined that were developed ex ante while continuing to be restricted through the principles of the funding policy. These principles are specified in more detail in paragraph 3.2. This enables a 10-year loan to be issued every year and the DSTA always ensures a particular issuance volume per DSL. In addition, the aim is to issue a long-term loan once every four to five years. The analyses only examined which of the portfolios was ideal given the above principles, and not whether there may be other better portfolios without taking the principles of the funding policy into account. So, it could be possible that better portfolios were possible under a more flexible funding policy.

Another point concerns the DSTA's risk appetite. The underlying principle in the analysis of 2015 was that the risk may not be larger than the risk in the period 2012-2015. Here it was not clearly specified which considerations contributed to the maximum risk appetite. In the policy period 2012-2015 too, the underlying principle throughout was that the risk in the new policy period may not be larger than in the previous period. SEO concluded that in the period 2016-2019 this had resulted in the DSTA – and the Ministry of Finance in general – still allowing itself to be guided by the preferred risk of 2002.

For the quantitative research, SEO carried out several model simulations<sup>57</sup>. In the quantitative analysis, as was the case for the DSTA in 2015, SEO kept no account of swaps. Based on the results of the quantitative ex ante research, SEO concludes that the DSTA, based on information that was available at the end of 2015 and given the funding policy, could only achieve a further cost reduction to a very limited extent at the same risk. The interest rate risk framework of 2016-2019 has been cost-reducing ex ante compared to the preceding interest rate risk framework. Although SEO concludes that the methodology of the analysis carried out by the DSTA in 2015 for the new interest rate risk framework could be improved in parts, the results are close to the results of the model simulations (the so-called

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<sup>56</sup> A yield curve shows the correlation between the yield on otherwise equal or comparable loans with different maturities. The horizontal axis shows the maturity in years, and the vertical axis shows the yield (usually in the form of yield to maturity)

<sup>57</sup> Here SEO makes use of the model by Zenios et al. (2018).

'efficient frontier') which SEO had carried out. Based on these analyses, it can be concluded that the policy pursued by the DSTA has been effective and efficient.

This does not mean, however, that in the period 2016-2019 it was not possible to achieve lower interest costs than the DSTA has managed to do. Lower interest costs could have been achieved by taking more risks. In the years 2015-2019, against all expectations, the interest rate decreased further, in which, in hindsight, a shorter maturity of the debt portfolio had led to lower costs. A shorter maturity, however, is associated with a higher risk.

A possibility to achieve lower interest costs at the same risk can, according to SEO model simulations, only occur by relinquishing the underlying principles for the money market or by implementing a more flexible issuance policy in the capital market. A certain volume is pursued for the money market. This is important to ensure the liquidity. The money market should also be large enough to be able to absorb unexpected windfalls and setbacks in the national budget. A downside, however, is that relinquishing the underlying principles for the money market may lead to slightly higher costs, for example, because it becomes less liquid. To a certain extent, the DSTA has already introduced a more flexible issuance policy, as described in paragraphs 3.2.3 and 4.1.1.2.

#### *Funding policy*

Paragraph 4.1 describes that the international comparison carried out by SEO among European countries shows that the DSTA has a high score in the field of consistency and transparency of the funding policy. Compared to most other countries, the Netherlands scores better on predictability and consistency, because of the timely announcements of auctions and specific details of the auction. The Netherlands rarely deviates from the funding plan.

Also in the field of transparency, the DSTA performs well in comparison to other countries within the EU. The DSTA not only publishes information about the funding policy in its annual Outlook and quarterly reports, but also publishes information about the interest rate risk framework, economic and budgetary prospects, market developments and relevant statistics.

In the previous policy review it was recommended to carry out additional research into whether and to what extent greater flexibility in the capital market was desirable and possible, without compromising on predictability. Partly as a result of this recommendation, in 2018 the DSTA announced the issuance of a long-term government bond without directly indicating whether this involved a new government bond or whether it was a reopening of an existing loan. The DSTA also proceeded to make use of a volume range on issuance in the capital market, instead of a fixed target volume. Greater flexibility leads to more uncertainty in the market and can lead to higher interest expenditures due to a higher risk premium.

SEO has examined whether this greater flexibility has led to higher interest expenditures. In this research, no evidence was found that the Netherlands has higher interest expenditures as a result of introducing a volume range on issuance in the capital market. From this it can be concluded that a somewhat more flexible policy in the issuance of government bonds is efficient and effective.

#### *Liquidity*

Liquidity is one of the DSTA's core values. SEO has conducted research into the liquidity of Dutch government bonds. SEO concludes that the Netherlands makes use of most of the international recommendations in the funding policy. SEO also states that the DSTA's funding policy has most likely contributed to sustaining a high liquidity of Dutch government bonds. Due to a lower funding need of the Netherlands, since 2018 the DSTA has been issuing a lower volume of government bonds. In a

quantitative analysis, SEO shows that this has reduced the liquidity of Dutch government bonds. The analysis further shows that a change in the total outstanding volume per loan has a larger effect on liquidity than the number of outstanding loans. This means that it would be better for the liquidity to issue fewer loans but with enough outstanding volume, instead of pursuing a lower outstanding volume per loan<sup>58</sup> and by issuing many different loans. In the light of these results, it can be concluded that the DSTA would have been more effective and more efficient if, due to the declining funding need, it had been decided to issue fewer different loans instead of reducing the target volume for loans. Drawing on the research into the efficiency and effectiveness of the interest rate risk framework and the funding policy, SEO makes several recommendations to enhance the efficiency and effectiveness:

For the interest rate risk framework:

- Explicitly outline the maximum risk appetite of the government with regard to debt management and choose a risk indicator that measures that risk appetite.
- Make use of a stochastic model to analyse ex ante various portfolios under certain interest rate and funding need scenarios, in order to assess the weighted impact of shocks.
- Make use of scenarios that are consistent with scenarios used by other organisations (such as CPB, DNB, etc.) to predict economic and budgetary developments.
- Scrutinise the dependency between the interest rate risk framework and the funding policy and keep account of this.

For the funding policy:

- Integrate the funding policy more explicitly in the ex-ante interest rate risk framework, allowing for flexibility in the funding policy.
- Given a declining funding need: set priorities as to which government bonds should or should not be issued.
- Keep the transparency and consistency at the current high levels, by continuing to inform both the market and the public in the present manner.

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<sup>58</sup> Due to the lower funding need in 2018, the DSTA started issuing a lower volume per loan, from €15 to €12 billion.

## 5 Final conclusion and recommendations, improvement section

### 5.1 Final conclusion

In terms of the sub-questions:

- *How and to what extent has the interest rate risk policy contributed to funding the national debt at the lowest possible cost under acceptable risk to the budget?*
- *How and to what extent has the funding policy and changes made to it, contributed to funding the national debt at the lowest possible cost under acceptable risk to the budget? Is there room for more flexibility within the funding policy to increase efficiency, without the risk increasing?*

It has been established that, based on the information that was available at the end of 2015, and given the funding policy, the DSTA could only have achieved a further cost reduction to a very limited extent. The interest rate risk framework of 2016-2019 has been cost-reducing ex ante compared to the preceding interest rate risk framework. The annual target values for the risk indicators in the long-term (average maturity) and in the short-term (refixing amount, *RA*) have been achieved. It has also been observed that the interest rate scenarios used by the DSTA in 2015 in establishing these targets, were rather pessimistic, which has possibly led to an overestimation of the future financing costs and an attitude that was too risk-averse. It was also established that the DSTA still allows itself to be guided by a preferred risk dating back to 2002, because the aim since then has been that the risk in a new policy period could not exceed that of the preceding policy period. Although the methodology of the analysis carried out by the DSTA in 2015 for the new interest rate risk framework could be further improved in parts, ex post simulations based on a more sophisticated method have not led to significantly different results than the DSTA's ex ante analysis.

In the light of sub-question (ii), it was found that the DSTA's funding policy with the core values consistency, transparency and tradability/liquidity, complies with the international standards of the IMF and World Bank. By pursuing a consistent and transparent funding policy, the uncertainty premium has been reduced to a minimum. The DSTA's policy in the period 2016-2019 was aimed towards keeping the tradability of government bonds as high as possible, which limited the liquidity premium. The modest additional flexibility that the DSTA started using in its funding policy, has not led to higher risk premiums in the capital market. However, the reduction of the volume of the 10-year loan to €12 billion did lead to a significant increase in the bid-ask spread of 0.4 basis points, which may indicate reduced liquidity. However, the Primary Dealers observed hardly any effects, if at all, on the liquidity in the capital market and also consider the liquidity of DTCs to be sufficient.

Looking at the central research question:

*To what extent has the policy pursued contributed to debt financing at the lowest possible cost at acceptable risk to the budget?*

It can be concluded that the DSTA has financed the national debt within the risk frameworks set for this purpose for the policy period 2016-2019 (acceptable risk), and this, taking into consideration the core values of transparency, consistency and liquidity, could barely have been done cheaper with the same risk (at lowest possible costs). The DSTA's policy in 2016-2019 has therefore also been effective and efficient.

Finally, it can be stated that the DSTA has followed-up on the five recommendations in the 2015 policy review, which are mentioned in paragraph 1.2:

- The risk indicators' average maturity and refixing amount (*RA*) are SMART, in which the *RA* could improve on uniformity and robustness;

- Dependency on swaps has decreased in the sense that the volume of the swap portfolio has been reduced further and no new swaps have been entered into in the capital market. Yet, the termination of swaps was used to achieve the risk indicator targets. Alternative strategies without early termination of swaps or other use of swaps were unattractive, because they were not consistent with the funding policy or they were relatively expensive;
- Partly in view of the historically low interest rates, the average maturity of the portfolio in the period 2016-2019 has been extended to 6.5 at year end 2019;
- To a modest degree, the DSTA has been maintaining more flexibility in its funding policy. This has not led to higher risk premiums in the capital market. However, the reduction of the volume of the 10-year loan to €12 billion did lead to a significant increase in the bid-ask spread of 0.4 basis points, which may indicate reduced liquidity. The Primary Dealers observed hardly any effects, if at all, on the liquidity in the capital market and also consider the liquidity of DTCs to be sufficient;
- In 2017, an interim evaluation was carried out, because of the lower national debt. This did not lead to substantial new insights that called for an adjustment of the policy framework.

## 5.2 Recommendations

The findings in this policy review lead to the following recommendations:

- Explicitly decide on and outline the (maximum) risk appetite of the government with regard to debt management and choose a risk indicator that measures that risk appetite.
  - In doing so, use a stochastic model to analyse ex ante various portfolios under certain interest rate and funding need scenarios, in order to assess the (weighted) impact of shocks.
  - Use scenarios that are consistent with the scenarios used by public bodies and market participants to predict economic and budgetary developments.
  - Conduct scenario analyses for the development of the risk indicators, also in the longer term.
  - Consider whether the way in which the RA as a risk indicator is calculated could be made clearer and more robust.
- Consider the dependency between the interest rate risk framework and the funding policy.
- Keep transparency and consistency at the current high levels, by continuing to inform both the market and the public in the present manner. At the same time, leave room for flexibility in the funding policy. Set priorities as to which government bonds should or should not be issued in the event of a declining funding need.
- Consider monitoring the liquidity of Dutch debt securities on a more continuous basis by referring to various different indicators.
- Remain conscious of becoming too dependent on interest rate swaps. At the same time, continue to regard swaps as a valid instrument for steering interest rate risks, if adjustments through debt issuance only is not considered desirable, for example for liquidity and/or consistency reasons. When applying swaps, try to implement the swap strategy in the most efficient way possible, for example by:
  - formulating an explicit benchmark against which the performance of the swap transactions can be measured;
  - assessing whether it is preferable, from a cost/risk perspective, to enter into new swap agreements or terminate existing ones and – in the event that new swaps are entered into – whether a central counterparty (CCP) or a bilateral agreement with a counterparty is to be preferred.

- The policy framework 2016-2019 stated that the policy would be evaluated in the interim if changing market circumstances would provide reason for doing so. Alternatively, it could be considered to determine immediately at the start of the new policy framework, that such an interim evaluation is to take place.

The recommendations are specific input which can be taken into account in establishing the new policy framework for the coming period. The government's response to the policy review would need to express to what extent the recommendations in formulating the new policy framework will be taken into account.

### 5.3 Suggestions for improvement

This paragraph of the policy review intends to give more insight into the efficiency and effectiveness of the policy, during a subsequent policy evaluation. The paragraphs contains suggestions for future improvement.

At the request of the DSTA, an independent third party (SEO Amsterdam Economics) has conducted both qualitative and quantitative research into the funding policy and the interest rate risk framework. This research has been fixed on a scientific basis, and shows that the policy has largely been efficient and effective. Research into the interest rate risk framework has been established using an advanced model for optimisation of the national debt portfolio. It is therefore possible, based on the available research material, to draw conclusions about the effectiveness and efficiency of the interest rate risk framework and funding policy.

Despite the scientific and model-based method to establish the effectiveness and efficiency of the interest rate risk framework, the model also has its limitations. For example, swaps were not included in the model, so the analyses do not include the costs and risk effects which are associated with the existing swap portfolio. Neither has the possibility of entering into new swaps to adjust the risk profile of the national debt portfolio, been included in the research. In paragraph 4.3 a separate analysis has been done of the swap strategy followed in this policy period. This analysis is *supplemental* to the findings of SEO on efficiency and effectiveness, rather than being part of it. In follow-up analyses, it is recommended to include the effect of the swap portfolio in the analysis into effectiveness.

Sometimes a translation was needed – literally and figuratively – to be able to present the SEO findings in this policy review. This exercise, in combination with the additional analyses which had to be done on swaps, means that it should be considered to have a next evaluation or policy review *comprehensively* written by a third party.

To be able to use the results of the policy review as the basis for the new policy framework, the policy review has largely been written in 2019 – a year which forms part of the evaluation period. A downside to this is that not all results for 2019 could be included in the evaluation.

To mitigate this disadvantage somewhat in the future, for the following policy review it should be considered to cover a longer period of time, for example seven years. Smaller evaluations could be carried out in the interim to make adjustments to the policy, if necessary.

\*\* Not translated:

Paragraph 5.4 Answers to questions of the 'Periodic Evaluation Regulation'\*\*

## Annex 1: Abbreviations and glossary

**Bid-ask spread** – The difference between the highest price at which buyers are willing to buy a security and the lowest price at which sellers want to sell. A smaller difference generally implies lower transaction costs and more liquidity in the secondary market.

**Collateral** – A safeguard in the form of securities or money that serves as security that loaned funds will be paid back. The DSTA receives collateral for swaps with a positive market value.

**Commercial Paper (CP)** – Standardised debt security issued by the DSTA, with flexible start and end dates and with short-term maturities, ranging from one day to twelve months. Commercial Paper can be placed with investors in the US in the form of US Commercial Paper (USCP) and with investors outside the US in the form of Euro Commercial Paper (ECP). USCP is only issued in US dollars and ECP in euros, US dollars, British pounds, Swiss francs and Norwegian crowns.

**Commercial Paper Dealer (CPD)** – Banks appointed by the DSTA for the purchase, promotion and distribution of Commercial Paper. These banks are selected from the group of Primary Dealers and Single Market Specialists.

**Coupon** – The annual interest rate received by holders of government bonds. The DSTA's coupon payments take place annually on standard predetermined days, usually 15 January or 15 July. The term 'coupon' stems from the time that a bond consisted of a main bond (body) with a number of interest coupons. Every year the holder could detach the relevant coupon and return it to the (central) bank to receive interest. Nowadays, the interest payment is done via electronic means, but the concept of coupon has remained. On the maturity date of the government bond, the last interest coupon is redeemed and the nominal amount is repaid.

**CPB** – Netherlands Bureau for Economic Policy Analysis ([www.cpb.nl](http://www.cpb.nl))

**Currency swaps** – Transactions in which two parties exchange currencies for a specified period at a price agreed to in advance.

**Derivatives** – Financial products whose value is derived from the value of another product. The price of a derivative depends, among other things, on the fluctuations in the value of the underlying product. The DSTA uses various derivatives like swaps to hedge risks inherent in capital market and money market issuances.

**DNB** – De Nederlandsche Bank [the Dutch Central Bank]([www.dnb.nl](http://www.dnb.nl))

**DSTA** – Dutch State Treasury Agency of the Ministry of Finance. The sovereign debt manager of the Dutch state.

**Dutch Direct Auction (DDA)** – One of the three auction techniques used by the DSTA. The DDA is used for auctioning government bonds with a medium to long-term maturity. In the DDA system, end investors can participate directly in an auction of new Dutch State Loans (DSLs) through one (or more) Primary Dealers. Prior to the auction, the DSTA establishes a range for the spread (usually in relation to a German loan), within which investors can place their bids. The investors indicate the volume that they would like to purchase per spread. After closing the auction book, the DSTA allocates loans to investors at a uniform price.

**Dutch Treasury Certificate (DTC)** – see treasury bills



**Dutch State Loans (DSLs)** – see government bonds

**General government balance** – The general government balance is the sum of all revenue and expenditure of national government and the regional and local authorities on an accrual basis. Eurostat has established which items contribute to the general government balance. Financial transactions, such as the issuing of study and other loans, the sale of government property or the interest received on interest rate swaps, are not included in the general government balance. Also known as the EMU-balance.

**General government debt** – The debt of the public sector, including local and regional governments and agencies. Also known as EMU-debt.

**Government Accounts Act 2016** – The Government Accounts Act 2016 (*Comptabiliteitswet 2016*) provides the legal framework for the management, control and accountability of the National Government's finances. (Officially published in: Bulletin of Acts and Decrees 2017, 139. )

**Government bonds (DSL)** – Debt securities of the State with maturities longer than one year. Also known as Dutch State Loans (DSLs). Holders of DSLs receive the coupon interest annually.

**Gross domestic product (GDP)** – The total added value of all final goods and services produced in a country during a certain period (usually a year). Also known as 'the size of the economy'.

**IMF** – International Monetary Fund ([www.imf.org](http://www.imf.org))

**Interest rate risk** – The risk that interest expenditures on the national debt rise due to changes in the interest rate.

**Interest Rate Swap** – A contract between two parties is agreed, to exchange a fixed interest rate for a variable interest rate during the maturity of the swap. For payer swaps, a fixed interest rate must be paid and a variable interest rate is received. For receiver swaps, a fixed interest rate is received and a variable interest is paid.

**Lender of last resort** – The institution that provides banks or other institutes with liquidity in situations when other institutions do not provide such liquidity. The DSTA acts as a lender of last resort by briefly lending scarce debt securities to banks using the repo facility.

**Liquidity** – The tradability of securities, for example, government securities. The degree of liquidity in the secondary market determines whether major buying and selling orders can be traded without this having a substantial effect on the price (rate).

**Long-term debt** – Loans with an original maturity of more than one year.

**Maturity** – Period over which a loan is concluded.

**National debt** – The total outstanding financial loans of the State (long-term and short-term debt).

**Outlook** – Annual publication by the DSTA in December. The Outlook takes a retrospective look at the past year and looks ahead to financing national debt in the forthcoming year.

**Payer Swap** – see interest rate swap

**Primary Dealers (PDs)** – Banks appointed by the DSTA for the duration of one year for the purchase, promotion and distribution of Dutch government bonds and treasury bills.

**Quotation obligation** – Obligation for Primary Dealers and Single Market Specialists to actively offer competitive buying and selling prices for Dutch debt securities in the secondary market. Quotations contribute to the tradability of Dutch debt securities.

**Receiver Swap** – see interest rate swap.

**Refixing amount (RA)** – That part of the debt and swap portfolio on which the interest rate must be refixed within twelve months, expressed as a percentage of the debt.

**Repo facility** – A facility with which the DSTA sells DTCs and DSLs for a short-term and buys it back at the same time on a date in the future. The repo facility is at the disposal of Primary Dealers.

**RPE** – Periodic Evaluation Regulation.

**Single Market Specialists (SMSs)** – Banks appointed by the DSTA for the duration of one year for the purchase, promotion and distribution of Dutch Treasury Certificates (DTCs).

**SEO** – SEO Amsterdam Economics ([www.SEO.nl](http://www.SEO.nl))

**Short-term debt** – Loans with an original maturity of up to one year.

**Swap interest rate** – The fixed interest rate paid or received on an interest rate swap.

**Swap portfolio** – The total amount of swaps entered into by the Dutch State.

**Tap auctions** – Method of auction used by the DSTA, particularly for reopening DSLs. At the start of the auction, the DSTA announces the price, which can be adjusted during the auction depending on the market circumstances. Primary Dealers determine the volume that they wish to purchase at the set price. As soon as the desired volume is reached within a range communicated in advance, the auction is closed.

**Treasury bills (DTC)** – Debt securities of the State with maturities up to twelve months. Also known as Dutch Treasury Certificates. DTCs are issued at predetermined dates.

**Volatility** – The degree of variability of the rate or interest rate of a financial product.

**Yield curve** – The diagram that reflects the relationship between the interest rate and the different maturities of Dutch debt securities.

\*\* Not translated:  
Annex 2: External expert opinion \*\*